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IONOSPHERIC DATA

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TERMINOLOGY AND SCALING PRACTICES

The symbols and terminology used in this report are those adopted by the International Radio Propagation Conference, and given in detail on pages 24 to 26 of the report IRPL-C61, "Report of International Radio Propagation Conference," and in the section on "Terminology" in report IRPL-F5.

Beginning with IRPL-F14 the symbol L, defined as follows, is used in detailed tabulations of hourly values of ionosphere characteristics observed at Washington:

> L or 1 = critical frequency, muf, or muf factor for F1 layer omitted because no definite and abrupt change in slope of the h'f curve occurs either for the first reflection or for any of the multiples.

In the past, ionospheric conditions were summarized on a monthly basis by using average or mean values for each hour of the day for each month. However, following the recommendations of the International Radio Propagation Conference, held in Washington 17 April to 5 May 1944, beginning with data for 1 Jan. 1945, median values were used by IRPL wherever possible. Thus, median values are given for Washington, for all stations reporting directly to the CRPL, for the Canadian stations, and for all others sending to the CRPL detailed tabulations from which medians can be computed.

Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The monthly median values used here are the values equaled or exceeded on half the days of the month at the given hour. The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in the report referred to above, IRPL-C61.

a. For all ionospheric characteristics:
   Values missing because of A, B, C or F (see terminology referred to above) are omitted from the median count.

b. For critical frequencies and virtual heights:
   Values of $f^{o}F2$ missing because of E are counted as equal to or less than the lower limit of the recorder. Ordinarily, values of virtual heights, $f^{o}F1$, and $f^{o}E$ missing for this reason are omitted from the median count.
   Values missing because of D are counted as equal to or greater than the upper limit of the recorder.
   Values missing because of G are counted:
   1. For $f^{o}F2$, as equal to or less than $f^{o}F1$.
   2. For h'F2, as equal to or greater than the median.
   Values missing for any other reason are omitted from the median count.

c. For muf factors (M-factors):

Values missing because of G are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because no Es reflections appeared, the equipment functioning normally otherwise, are counted as equal to or less than the median $f^{\circ}E$, or equal to or less than the lower frequency count of the recorder.

Values of fEs missing for any other reason, and values of hEs missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

It is expected that this practice will be of assistance in evaluating the monthly median Washington data.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

Beginning with CRPL-F33, an additional group of symbols is used in recording the Washington, D.C. data. The list of additional symbols and their meanings follows:

N -- unable to make logical interpretation.
P -- trace extrapolated to a critical frequency.
Q -- the F1 layer not present as a distinct layer.
R -- curve becomes incoherent near the F2 critical frequency.
S -- no observation obtainable because of interference.
U -- forked record.
Z -- triple split near critical frequency.

For a more detailed explanation of the meaning and use of these symbols, see the report CRPL-7-1, Preliminary Instructions for Obtaining and Reducing Manual Ionospheric Records.

MONTHLY AVERAGE AND MEDIAN VALUES OF WORLD-WIDE IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 73 and figures 1 to 130 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL predictions of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data:

Australian Council for Scientific and Industrial Research,
Radio Research Board:
- Brisbane, Australia
- Canberra, Australia
- Cape York, Australia
- Hobart, Tasmania
- Townsville, Australia

British Department of Scientific and Industrial Research,
Radio Research Board:
- Falkland Is.
- Slough, England

Canadian Radio Wave Propagation Committee:
- Churchill, Canada
- Clyde, Baffin I.
- Ottawa, Canada
- Portage la Prairie, Manitoba
- Prince Rupert, Canada
- St. John's, Newfoundland

New Zealand Radio Research Committee:
- Campbell I.
- Christchurch, New Zealand (Canterbury University College Observatory)
- Fiji Is.
- Kermadec Is.
- Rarotonga I.

South African Council for Scientific and Industrial Research:
- Capetown, Union of S. Africa
- Johannesburg, Union of S.Africa

Scientific Research Institute of Terrestrial Magnetism, Moscow, U.S.S.R.:
- Alma Ata, U.S.S.R.
- Bay Tiksey, U.S.S.R.
- Bukhta Tikhaya, U.S.S.R.
- Chita, U.S.S.R.
- Leningrad, U.S.S.R.
- Moscow, U.S.S.R.
- Sverdlovsk, U.S.S.R.
- Tomsk, U.S.S.R.

Carnegie Institution of Washington (Department of Terrestrial Magnetism):
Huancayo, Peru
Watheroo, W. Australia

United States Army Signal Corps:
Okinawa I.
Shibata, Japan
Tokyo, Japan
Yamakawa, Japan

National Bureau of Standards (Central Radio Propagation Laboratory):
Adak, Alaska
Baton Rouge, Louisiana (Louisiana State University)
Boston, Massachusetts (Harvard University)
Fairbanks, Alaska (University of Alaska, College, Alaska)
Guam I.
Maui, Hawaii
Palmyra I.
San Francisco, California (Stanford University)
San Juan, Puerto Rico (University of Puerto Rico)
Trinidad, British West Indies
Washington, D. C.
White Sands, New Mexico
Wuchang, China (National Wuhan University)

All India Radio (Government of India), New Delhi, India:
Bombay, India
Delhi, India
Madras, India
Peshawar, India

Indian Council of Scientific and Industrial Research,
Radio Research Committee:
Calcutta, India

Radio Wave Research Laboratory, Central Broadcasting Administration:
Chungking, China
Lanchow, China
Peiping, China

French Ministry of Naval Armaments (Section for Scientific Research):
Fribourg, Germany

Philippine Republic, Department of National Defense:
Leyte, Philippine Is.

Norwegian Defense Research Establishment, Florida, Bergen, Norway:
Oslo, Norway
Tromso, Norway

Beginning with CRPL-F26, publication of tables of so-called "provisional data" reported to the CRPL by telephone or telegraph was discontinued. The reason for this change in policy is that users of the data hitherto published in this form receive them through established channels sooner than they reach them in the F-series. Furthermore, having two sets of data, "provisional" and "final," for the same station for the same month leads to confusion.

It must be emphasized that there is no change in the methods used for rapid reporting and exchange of data. The change has to do only with the printing of provisional data in the F-series.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of these errors are due to:

a. Differences in scaling records where spread echoes are present.

b. Omission of values where $f^{o}F2$ is less than or equal to $f^{o}F1$, leading to erroneously high values of monthly averages or median values.

c. Omission of values where critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. Predictions for individual stations used to construct the charts may be more accurate than the values read from the chart since some smoothing of the contours is necessary to allow for the longitude effect within a zone. The following predicted smoothed 12-month running-average Zurich sunspot numbers were used in constructing the contour charts, beginning with August 1945:

Month	Predicted Sunspot No.	Month	Predicted Sunspot No.
May 1947	109	June 1946	67
April 1947	107	May 1946	67
March 1947	105	April 1946	62
February 1947	90	March 1946	51
January 1947	88	February 1946	46
December 1946	85	January 1946	42
November 1946	83	December 1945	38
October 1946	81	November 1945	36
September 1946	79	October 1945	23
August 1946	77	September 1945	22
July 1946	73	August 1945	20

IONOSPHERIC DATA FOR EVERY DAY AND HOUR AT WASHINGTON, D. C.

The data given in tables 74 to 85 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Terminology and Scaling Practices."

IONOSPHERE DISTURBANCES

Table 86 presents ionosphere character figures for Washington, D.C., during May 1947, as determined by the criteria presented in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, magnetic K-figures, which are usually covariant with them.

Table 87 lists for the stations whose locations are given the sudden ionosphere disturbances observed on the continuous field intensity recordings made at the Sterling Radio Propagation Laboratory during May 1947.

Table 88 lists for the stations whose locations are given the sudden ionosphere disturbances observed at the Brentwood and Somerton, England, receiving stations of Cable and Wireless Ltd. from April 15 to May 17, 1947, inclusive.

Table 89 gives provisional radio propagation quality figures for the North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, April 1947, compared with the CRPL daily radio disturbance warnings, which are primarily for the North Atlantic paths, the CRPL weekly radio propagation forecasts of probable disturbed periods, and the half-day Cheltenham, Maryland, geomagnetic K-figures.

The radio propagation quality figures for the North Atlantic are prepared from radio traffic and ionospheric data reported to the CRPL, in the manner described in detail in report IRPL-R31, "North Atlantic Radio Propagation Disturbances, October 1943 through October 1945," issued 1 February 1946.

The radio propagation quality figures for the North Pacific are prepared from radio traffic and ionospheric data reported to the CRPL, in a manner similar to that of IRPL-R31. The master scale of IRPL-R31 was used to formulate conversion scales for the North Pacific reports. Beginning with CRPL-F23, issued July 1946, the North Pacific radio propagation quality figures reported are prepared from these revised conversion scales.

These radio propagation quality figures give a consensus of opinion of actual radio propagation conditions as reported by the half day over the two general areas. It should be borne in mind, however, that though the quality may be disturbed according to the CRPL scale, the cause of the disturbance is not necessarily known. There are many variables that must be considered. In addition to ionospheric storminess itself as the cause, conditions may be reported as disturbed because of seasonal characteristics, such as are particularly evident in the pronounced day and night contrast over North Pacific paths during the winter months, or because of improper frequency usage for the path and time of day in question. Insofar as possible, frequency usage is included in rating the reports. Where the actual frequency usage is not shown in the report to the CRPL, it has been assumed that the report is made on the use of optimum working frequencies for the path and time of day in question. Since there is a possibility that all the disturbance shown by the quality figures is not due to ionospheric storminess alone, care should be taken in using the quality figures in research correlations with solar, auroral, geomagnetic, or other data. Nevertheless, these quality figures do reflect a consensus of opinion of actual radio propagation conditions as found on any one half day in either of the two general areas.

AMERICAN RELATIVE SUNSPOT NUMBERS

Table 90 presents the daily median values of relative sunspot numbers as reported by American observers for May 1947. The reports have been reduced, by appropriate constants, approximately to the Zurich scale of relative sunspot numbers. The monthly relative sunspot number is the mean of the daily median values listed in the table. This method was devised by Mr. A. H. Shapley, while a member of the staff of the Department of Terrestrial Magnetism, Carnegie Institution of Washington. Details will be found in his article, "American Observations of Relative Sunspot Numbers in 1945 for Application to Ionospheric Prediction," Popular Astronomy, vol. 54, No. 7, pp. 351-358. The criteria for A observers have been modified slightly, beginning with September 1946. In order for an observer's report to be included in the American sunspot numbers, the mean deviation of the reduction factors for his observations for the four preceding months must have been within 15% of the 4-month running mean of his reduction factors, rather than within an interval of ± 0.16 of that running mean. This avoids favoring observers with small reduction factors and discriminating against observers with large reduction factors. In addition sunspot numbers must have been reported for at least one-half of the month during three-quarters of the preceding year. This will tend to restrict the observers to those whose observations are consistent from month to month without rejecting the work of observers for whom weather conditions are unsatisfactory for observations during some months of the year.

SOLAR CORONAL INTENSITIES OBSERVED AT CLIMAX, COLORADO

In table 91 the intensities of the green (λ 5303A), first red (λ 6374A), and second red (λ 6704A) lines of the solar corona as observed during May 1947, by the High Altitude Observatory of Harvard University and the University of Colorado at Climax, Colorado, are given for every 5° from astronomical north for each day on which observations were possible. An arbitrary intensity-scale of approximately 0 to 40 is used. To convert from astronomical north and to determine the positions relative to the solar rotational equator subtract the algebraic value of the position-angle of the solar axis. This quantity varies from -26 to +26 degrees during the year, and is tabulated in the nautical almanacs. If observations are uncertain, the initials l.w. (low weight) follow the date. The time of observation in hours GCT is listed. Dashes indicate that the intensity for that position is below the observable threshold. Absence of observation made at a given position is indicated by X.

ERRATUM

The following paragraph quoted from a letter from the Australian Radio Propagation Committee dated 14 April 1947 furnishes the necessary corrections in time sweeps published in the CRPL-F31 in connection with data for 1941 from Canberra, Australia, and additional information concerning the sweeps used subsequently at this station:

"I should like to point out that this frequency range (1.6 Mc to 12.5 Mc in two minutes) is correct for the months of September to December (1941) only, that of the recorder in use up to August 19th, 1941, being 2.2 Mc to 13.0 Mc in two minutes. The recorder installed in August 1941 was in use to September 1946. The frequency range and time of sweep of the new recorder which commenced operation on December 7th, 1946, are 1.0 Mc to 16.0 Mc in 1 minute 55 seconds."

The CRPL greatly appreciates such corrections and information for use in the analysis and publication of ionospheric data.

Table 1

Washington, D. C. (39.0°N, 77.5°W) May 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	290	7.3						(2.6)
07	(320)	7.4						2.6
08	345	8.6		5.2				2.5
09	420	8.7	(250)	5.3			(5.2)	2.4
10	(420)	9.4		5.4				(2.4)
11	430	10.0		(5.6)				2.4
12	430	10.0	(255)	(5.6)				2.4
13	(450)	10.0	(240)	(5.6)				(2.4)
14	(470)	9.8	(240)	(5.6)				2.4
15	460	9.2		5.6				2.4
16	(435)	8.8	(270)	(5.4)				2.4
17	(410)	9.1		(5.1)			(6.1)	2.5
18	(380)	9.2		4.6			(6.6)	2.5
19								
20								
21								
22								
23								

Time: 75.0°W.
Sweep: 3.1 Mc to 17.0 Mc. Manual operation.

Table 2

Clyde, Baffin I. (70.5°N, 68.6°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	340	5.4						
01	330	5.2						
02	335	5.1						
03	350	4.6						
04	340	5.4						
05	340	5.1						
06	350	5.0						
07	400	5.8						
08	440	6.0						
09	440	6.6						
10								
11	460	6.1						
12	450	6.6						
13	400	6.2						
14	450	6.0						
15	400	6.4						
16	320	6.2						
17	390	6.6						
18	345	6.5						
19	325	6.6						
20	320	6.9						
21	300	6.3						
22	320	5.7						
23	340	6.2						

Time: 75.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute; 1.9 Mc to 13.0 Mc, manual operation.

Table 3

Fairbanks, Alaska (64.9°N, 147.8°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	390	5.3					5.4	2.4
01	410	5.2					3.6	2.4
02	402	5.2					4.0	2.4
03	410	5.2				1.6	5.0	2.4
04	390	5.5				2.0	4.0	2.4
05	420	5.4		3.6		2.3	3.6	2.4
06	475	5.6	302	4.1		2.4	3.2	2.3
07	460	6.2	260	4.2		2.8	3.3	2.4
08	510	6.1	254	4.6		3.2	3.3	2.3
09	450	7.1	250	4.8		3.3	2.4	2.4
10	450	6.8	240	4.8		3.4	1.6	2.4
11	470	7.0	250	4.9		3.5	2.6	2.4
12	475	7.2	250	5.0		3.5	3.5	2.4
13	420	7.4	240	5.2		3.5	3.4	2.4
14	400	7.7	245	5.2		3.3	3.1	2.4
15	270	7.6	250	4.8		3.2	3.0	2.5
16	262	7.4	250	4.7		2.9	2.2	2.6
17	270	7.5	268	4.4		2.6	2.4	2.6
18	275	7.4				2.3	2.6	2.7
19	278	6.4				2.0	2.6	2.7
20	300	5.5				1.6	2.8	2.7
21	345	5.2					3.4	2.6
22	378	5.1					3.9	2.6
23	375	5.4					3.6	2.5

Time: 150.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.

Table 4

Adak, Alaska (51.9°N, 176.6°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	310	5.5						2.6
01	310	5.4						2.5
02	320	5.3						2.5
03	330	5.0						2.4
04	340	4.8						2.5
05	330	5.3	300	3.2	130	(1.9)		2.5
06	360	6.4	260	4.0	120	2.3		2.6
07	360	7.3	240	4.6	110	2.8		2.6
08	355	7.7	230	5.0	110	3.2	3.3	2.6
09	355	8.3	220	5.2	110	3.5	3.8	2.7
10	340	9.1	220	5.4	110	(3.7)	3.8	2.7
11	340	9.6	220	5.6	(110)	3.7	3.8	2.7
12	320	10.0	220	5.6	110	3.8	4.0	2.7
13	310	10.2	220	5.6	(110)	(3.8)	3.8	2.7
14	300	10.0	220	5.6	110	(3.6)		2.8
15	275	9.6	220	5.4	110	3.5	3.7	2.8
16	255	9.0	240	5.0	105	3.2	3.6	2.9
17	240	8.9	240		110	2.8		2.9
18	250	8.8	(260)		120	2.2		3.0
19	240	8.5			(120)		1.9	3.0
20	240	7.8						2.9
21	240	7.1						2.8
22	250	6.1						2.7
23	280	5.8						2.6

Time: 180.0°W.
Sweep: 1.2 Mc to 15.5 Mc. Manual operation.

Table 5

Portage la Prairie, Manitoba (49.9°N, 98.3°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	320	5.2						2.7
01	350	4.8					2.0	2.5
02	340	4.8					2.3	2.6
03	320	4.6					1.2	2.5
04	310	4.4					1.2	2.6
05	305	4.4					1.5	2.6
06	280	5.1			130	1.9		2.8
07	260	5.6	245	3.8	110	2.4		2.8
08	255	6.8	240	4.3	110	3.0		2.8
09	295	7.2	220	4.7	110	3.2		2.7
10	360	7.6	220	5.2	100	3.5		2.6
11	390	7.8	220	5.2	100	3.6		2.6
12	380	8.0	210	5.2	100	3.7		2.6
13	400	8.2	220	5.3	100	3.6		2.6
14	400	8.3	230	5.2	100	3.6		2.6
15	355	8.4	220	5.2	100	3.4		2.6
16	355	8.7	230	5.2	100	3.2		2.7
17	340	8.4	245	4.8	110	2.9		2.7
18	260	8.4	250	4.2	110	2.4		2.7
19	250	8.4			130	2.2	1.9	2.8
20	250	8.0						2.8
21	250	7.6						2.8
22	260	6.8						2.7
23	280	6.0						2.7

Time: 90.0°W.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutes 30 seconds.

Table 6

Ottawa, Canada (45.5°N, 75.6°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	6.1						2.7
01	305	6.2						2.7
02	310	6.1						2.7
03	300	5.6						2.7
04	300	5.5						2.7
05	280	5.6						2.8
06	250	6.6			100	2.4		2.9
07	230	7.1			100	3.0		2.8
08	220	7.6			100	3.4		2.8
09	235	9.0	215	4.9	95	3.7		2.8
10	225	9.6	200	5.4	90	3.9		2.7
11	215	10.3			90	4.0		2.7
12	230	10.5	190	5.6	90	4.0		2.6
13	240	10.4			100	3.9		2.6
14	220	10.2			100	3.6		2.5
15	235	10.3			90	3.7		2.5
16	230	10.2			100	3.5		2.5
17	245	10.0			100	3.0		2.6
18	250	10.0				2.7		2.6
19	250	9.6						2.6
20	240	8.9						2.6
21	250	8.5						2.6
22	270	7.6						2.6
23	300	6.3						2.6

Time: 75.0°W.
Sweep: 1.7 Mc to 18.0 Mc. Manual operation.

Table 7

Boston, Massachusetts (42.4°N, 71.2°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	328	7.5						2.5
01	330	7.1						2.4
02	322	6.7					1.2	2.4
03	310	6.4					1.5	2.4
04	300	5.8					1.4	2.4
05	325	6.5					1.8	2.5
06	305	6.9						2.7
07	300	9.0			130	2.3		2.7
08	300	9.5			125	2.0		2.8
09	300	10.0			125	2.6		(2.8)
10	300	10.2			125	3.0		(2.7)
11	320	10.3			120	2.6		(2.7)
12	330							
13	350							
14	360	11.8						(2.6)
15	320	10.6			125	2.6		(2.7)
16	320	10.0			128	2.5		2.7
17	310	9.6			125	2.5		2.6
18	300	9.9			130	1.8		2.7
19	300	9.1			130	1.9		2.7
20	300	8.8			125	1.7		2.6
21	300	8.2						2.6
22	300	7.9						2.5
23	320	7.5						2.4

Time: 75.0°W.
Sweep: 0.85 Mc to 13.75 Mc in 1 minute.

Table 8

Peiping, China (39.9°N, 116.4°E) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		9.0						
01		8.5						
02		8.5						
03		8.4						
04		8.2						
05		8.2						
06		8.8						
07		10.0						
08		10.6						
09		10.6						
10		11.0						
11		11.0						
12		11.4						
13		11.5						
14		11.4						
15		11.0						
16		11.0						
17		11.2						
18		11.0						
19		11.1						
20		10.0						
21		9.9						
22		9.8						
23		9.6						

Time: 120.0°E.
Sweep: 2.3 Mc to 12.3 Mc in 15 minutes. Manual operation.

Table 9

San Francisco, California (37.4°N, 122.2°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280	6.0						2.6
01	260	6.1						2.7
02	260	6.0						2.7
03	265	5.7						2.6
04	280	5.7						2.6
05	280	6.0						2.7
06	240	6.8			120	2.4		2.9
07	220	8.2			100	3.1		3.0
08	220	9.6	220	5.6	100	3.5		2.8
09	220	10.0	200	6.0	100	3.6		2.8
10	300	10.9	200	6.3	100	3.8	4.0	2.7
11	260	11.4	200	5.9	100	3.9		2.7
12	300	11.5	200	6.6	100	3.9		2.7
13	300	12.0	200	6.6	100	3.9		2.7
14	275	11.6	200	6.2	100	3.8		2.7
15	270	11.5	220	6.2	100	3.6		2.7
16	220	11.2	220	6.1	100	3.4		2.8
17	220	11.0			100	3.2		2.9
18	220	10.5			100	2.4		3.0
19	210	9.0					2.0	3.0
20	220	8.1						2.9
21	230	6.9						2.8
22	260	6.6						2.7
23	280	6.5						2.6

Time: 120.0°W.
Sweep: 1.5 Mc to 18.5 Mc in 4.5 minutes.

Table 10

White Sands, New Mexico (32.6°N, 106.5°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	325	6.6					2.1	2.5
01	320	6.6					2.9	2.6
02	300	6.6					2.4	2.6
03	300	6.4						2.6
04	300	6.2						2.5
05	300	6.0					2.6	2.5
06	300	6.8	240			2.0	3.1	2.8
07	280	8.4	240		110	2.8	4.6	2.8
08	300	9.4	240		110	3.3	5.0	2.8
09	300	10.3	230		110	3.5	5.2	2.7
10	300	11.4	220	4.8	110	3.8	4.5	2.7
11	320	11.4	220	5.3	110	3.8	4.4	2.7
12	330	11.7	220	5.4	110	4.0	4.4	2.6
13	340	11.7	220	5.3	110	4.0	4.2	2.6
14	330	11.6	230	5.5	110	3.9		2.7
15	330	11.5	230		110	3.8		2.7
16	320	11.0	240		110	3.4	4.0	2.7
17	300	10.2	230		110	3.0	3.8	2.8
18	260	10.1	240		110	2.2	3.4	2.8
19	240	9.3					2.8	2.8
20	240	8.2					2.6	2.7
21	260	7.7					2.4	2.7
22	300	7.0					2.2	2.6
23	320	6.6					2.3	2.6

Time: 105.0°W.
Sweep: 0.79 Mc to 14.0 Mc in 2 minutes.

Table 11

Wuchang, China (30.6°N, 114.4°E) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280	10.2					1.8	2.8
01	280	10.1					1.7	2.8
02	280	9.6						2.8
03	260	8.7					1.9	2.8
04	260	8.0						2.7
05	270	7.4						2.7
06	290	8.6			145	1.8		2.8
07	260	10.5			130	2.6		3.1
08	250	12.0	250	6.7	130	3.2		2.9
09	250	12.5	240	7.6	120	3.6		2.9
10	300	13.5	240	7.2	120	3.8		2.7
11	320	14.0	240	7.4	125	4.0		2.7
12	330	14.5	250	7.2	120	4.2		2.6
13	350	14.5	250	7.0	130	4.0		2.6
14	350	14.8	260	7.0	120	4.0		2.6
15	350	14.5	255	6.6	130	3.8		2.6
16	320	14.4	265	5.9	130	3.6		2.7
17	290	14.4	270	5.8	130	3.2		2.7
18	280	14.0	260	4.4	130	2.4		2.8
19	260	13.5			125	1.6	4.1	2.8
20	280	12.0					3.8	2.7
21	300	11.2					3.4	2.7
22	300	11.6					3.2	2.7
23	290	11.0					2.6	2.8

Time: 120.0°E.
Sweep: 1.2 Mc to 19.2 Mc. Manual operation.

Table 12

Baton Rouge, Louisiana (30.5°N, 91.2°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	340	7.0						2.6
01	340	7.0						2.6
02	320	7.0						2.6
03	310	7.0						2.6
04	300	6.5						2.7
05	300	6.6						2.7
06	300	7.4			140	2.2		2.9
07	300	9.0	250		120	2.5		2.9
08	300	(10.2)	250		120	3.2		2.9
09	310	11.2	240		120	3.6		2.8
10	340	11.5	250	(6.0)	120	3.6		2.8
11	355	11.8	250		120	3.8		2.8
12	360	12.0	250	6.0	120	3.8		2.7
13	360	11.6	250	(5.7)	120	3.8		2.8
14	350	11.9	250		120	3.7		2.8
15	350	11.6	250		120	3.6		2.8
16	325	11.4	250	5.2	120	(3.4)		2.8
17	300	11.2	260		130	2.6		2.7
18	290	10.3				(2.3)		2.8
19	265	9.1						2.8
20	260	7.9						2.7
21	290	7.5						2.7
22	310	7.4						2.7
23	330	7.2						2.6

Time: 90.0°W.
Sweep: 2.0 Mc to 15.0 Mc in 5 minutes.

Table 13

Maui, Hawaii (20.8°N, 156.5°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	250	11.0					3.2	2.9
01	255	10.1					2.3	3.0
02	230	8.2					2.3	3.0
03	245	(7.3)					2.6	(2.7)
04	260	7.5					2.0	(2.6)
05	290	6.7					2.3	2.6
06	280	7.0				2.5	2.4	2.6
07	240	9.4			110	3.8	3.2	3.0
08	230	10.9			110	3.3	3.8	2.9
09	230	12.1	220	6.0	110	3.8	4.0	2.8
10	240	13.4	220	7.0	110	4.0	4.0	2.7
11	260	14.0	220	6.6	110	4.0	3.7	2.7
12	270	15.1	220	7.4	110	4.1	3.3	2.7
13	285	15.8	230	6.9	110	4.2	3.2	2.7
14	298	15.6	220	7.0	110	4.0	3.7	2.7
15	330	15.6	228	7.0	110	4.0	4.1	2.7
16	320	15.6	230	6.8	110	3.8	4.2	2.7
17	290	15.4	240	6.5	100	3.3	4.0	2.7
18	250	14.9	250	4.5	110	2.5	4.0	2.7
19	260	14.5					3.7	2.7
20	260	14.5					3.8	2.7
21	260	13.5					3.8	2.8
22	260	12.5					3.4	2.8
23	260	12.0					3.2	2.8

Time: 150.0°W.
Sweep: 1.2 Mc to 18.0 Mc in 15 minutes. Manual operation

Table 14

San Juan, Puerto Rico (18.4°E, 66.1°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		10.4						2.8
01		9.6						2.8
02		8.8						2.7
03		8.4						2.8
04		7.8						2.8
05		7.0						2.7
06		7.6						2.7
07	250	9.6		2.7				2.9
08	260	11.6		3.4		3.2	4.1	2.8
09	280	12.3				3.5	4.0	2.7
10	300	12.6				4.0		2.7
11	320	12.9				3.8		2.8
12	340	13.0				4.0		2.8
13	350	13.0						2.7
14	340	12.9						2.7
15	330	12.5		4.9		3.8		2.6
16	310	12.5				3.6	4.7	2.6
17	300	12.0					4.4	2.6
18	280	11.6						2.7
19	280	10.8						2.7
20		10.4						2.7
21		10.5						2.6
22		10.9						2.6
23		10.7						2.7

Time: 60.0°W.
Sweep: 2.8 Mc to 13.0 Mc in 8 minutes.

Table 15

Guam I. (13.5°N, 144.8°E) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	245						2.3	
01	230	(13.2)					2.3	3.2
02	220	10.6					2.3	2.9
03	235	10.6					3.2	2.8
04	240	9.2					4.0	2.8
05	220	(8.6)					4.5	3.0
06	240	7.8					4.6	2.9
07	242	10.4			115	2.5	5.2	3.0
08	240	12.2			118	3.3	9.0	2.9
09	230	13.0			110	3.7	9.0	2.6
10	230	13.6				(4.0)	8.6	2.4
11	215	14.0					7.5	2.3
12	210	14.2					8.6	2.2
13	200	14.2					7.2	2.2
14	220	14.4					7.4	2.2
15	220	14.8			105	3.8	7.4	2.2
16	240	14.9					8.2	2.2
17	240	15.1					8.2	2.4
18	260	14.3					6.9	2.2
19	320	13.7					5.2	2.1
20	392	13.3					4.3	2.2
21	360	(14.0)					2.7	2.3
22	302	(14.1)					2.7	2.6
23	270	(14.1)					3.2	2.9

Time: 150.0°E.
Sweep: 1.25 Mc to 19.0 Mc in 15 minutes. Manual operation.

Table 16

Trinidad, Brit. West Indies (10.6°N, 61.2°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	270	12.0						2.8
01	260	10.4						2.8
02	250	9.4						2.8
03	265	8.6						2.7
04	260	7.6						2.7
05	275	6.8						2.6
06	280	7.8					2.2	2.7
07	250	10.5			120	2.6	3.0	2.9
08	250	12.0			120	3.2	3.4	2.8
09	260	13.3	240		120	3.8	4.0	2.7
10	280	15.0	240		120	4.0	4.4	2.6
11	300	15.7	245		120	4.0	4.4	2.6
12	320	15.7	240	(5.6)	120	4.3	4.6	2.6
13	330	15.6	240	(5.6)	120	4.4	4.6	2.5
14	350	15.2	240		120	4.1	5.0	2.5
15	350	14.6	250		120	4.0	5.0	2.5
16	295	13.8	250		120	3.6	4.7	2.4
17	275	(13.0)	255		120	3.0	4.5	(2.5)
18	280	(12.6)					3.2	(2.6)
19	305	12.4					2.8	2.5
20	320	12.2					2.3	2.5
21	300	(12.8)						(2.6)
22	290	12.5						(2.6)
23	280	12.5						(2.7)

Time: 60.0°W.
Sweep: 1.2 Mc to 15.7 Mc. Manual operation.

Table 17

Palmyra I. (5.9°N, 162.1°W) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	230	13.2					3.2	(3.1)
01	230	11.6					3.2	2.8
02	250	11.2					3.6	2.8
03	245	11.2					3.2	2.8
04	240	10.4					4.0	2.9
05	235	8.8					3.4	3.0
06	250	7.9			172	1.6	3.6	2.8
07	255	9.8			120	2.8	4.6	2.8
08	235	11.8			110	3.5	6.4	2.7
09	240	12.8	210		110	4.0	5.2	2.5
10	250	13.0	210		108	4.2	5.8	2.5
11	262	13.2	210	4.6	110	4.3	5.8	2.5
12	280	13.2	210	5.3	110	4.1	5.9	2.4
13	285	13.6	208	5.2	110		5.7	2.4
14	282	13.9	210	4.8	110	4.1	5.2	2.4
15	280	14.0	215	4.6	110	4.0	5.4	2.4
16	250	14.2	228	3.8	110	3.5	5.5	2.4
17	250	13.9	250		135	3.0	5.4	2.4
18	280	13.6			142	2.3	5.2	2.3
19	378	12.8					3.8	2.2
20	400	12.2					1.9	2.2
21	332	13.0					2.6	2.4
22	270	13.4					3.6	2.6
23	245	13.7					2.9	2.8

Time: 157.5°W.
Sweep: 1.0 Mc to 13.0 Mc in 1.6 minutes, supplemented by manual operation above 13.0 Mc.

Table 18

Clyde, Baffin I. (70.5°N, 68.6°W) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	320	5.2						
01	330	5.4						
02	330	4.7						
03	310	4.7						
04	330	4.6						
05	330	4.5						
06	350	5.4						
07	300	6.1						
08	315	6.0						
09	(300)	7.0						
10		6.0						
11		(6.2)						
12		6.0						
13	(365)	6.0						
14	(350)	6.6						
15	(300)	6.8						
16	320	6.4						
17	300	5.8						
18	320	5.8						
19	315	5.8						
20	320	5.4						
21	330	5.8						
22	310	5.4						
23	305	4.8						

Time: 75.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute; supplemented by manual operation, 1.9 Mc to 13.0 Mc.

Table 19

Churchill, Canada (58.8°N, 94.2°W) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	5.6					4.8	2.6
01	300	5.0					3.7	2.7
02	320	5.1					3.6	(2.6)
03	300	4.5					2.7	(2.6)
04	340	4.4				2.6	3.5	(2.5)
05	350	4.1			110	2.7	2.7	(2.6)
06	340	4.1			100	2.7	2.6	(2.6)
07	320	4.8	230	3.7	135	3.1	3.2	2.8
08	285	6.4	260	3.5	120	2.6	3.0	2.8
09	305	8.2	260	4.4	110	3.2	2.9	2.8
10	300	7.4	255	4.8	110	3.3	3.4	2.8
11	305	8.2	260	4.8	110	3.4	2.6	2.7
12	325	8.2	250	4.9	110	3.3		2.6
13	290	9.2	250	4.7	120	3.3		2.6
14	295	9.6	250	4.6	130	3.3		2.7
15	290	9.9	250	4.6	130	3.2		2.7
16	270	9.3	250	4.5	120	2.9		2.7
17	260	8.3	255	3.8	130	2.6	2.4	2.8
18	260	6.9			130	2.6	2.6	2.7
19	300	6.6			130	2.6	2.7	2.6
20	300	5.9			125	2.8	3.0	2.5
21	300	6.0				2.7	3.5	2.6
22	270	5.5					5.2	2.6
23	290	5.2					3.8	2.6

Time: 90.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute; supplemented by manual operation, 2.0 Mc to 13.5 Mc.
*These critical, although given for the entire 24 hours, are obtained from the same characteristic traces as the E-layer values, commonly reported only for daylight hours.

Table 20

Prince Rupert, Canada (54.3°N, 130.3°W.) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	285	4.0						2.7
01	310	3.7					2.8	2.7
02	335	3.9					2.6	2.7
03	360	3.9					3.2	2.6
04	350	3.6					3.2	2.6
05	360	3.5					3.5	2.6
06	345	3.3					2.9	2.6
07	295	4.8			130	2.0	2.0	2.7
08	260	6.0	270	3.8	125	2.4	2.6	3.0
09	290	6.6	240	4.2	120	2.8		2.9
10	300	7.0	230	4.4	120	3.1		2.7
11	290	8.1	230	4.4	120	3.3		2.8
12	310	8.2	220	4.6	120	3.4		2.7
13	310	9.3	230	4.9	120	3.5		2.7
14	290	9.6	230	4.5	120	3.4		2.7
15	265	9.6	230	4.7	120	3.2		2.7
16	260	10.4	240	4.4	120	3.1		2.8
17	250	10.0	250	4.1	120	2.7		2.8
18	240	10.2			130	2.1		2.9
19	240	8.8				1.8		2.9
20	230	7.4						2.9
21	240	6.0						2.8
22	250	4.9						2.8
23	270	4.2						2.8

Time: 120.0 W.
Sweep: Manual operation.

Table 21*

Slough, England (51.5°N, 0.6°W) March 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	319	6.1					1.3	2.3
01	327	5.8					1.4	2.3
02	332	5.3					1.6	2.3
03	329	5.2					1.2	2.3
04	316	4.6					1.0	2.4
05	302	4.0			130	1.4	1.2	2.5
06	285	5.2			125	1.5		2.6
07	257	7.1			125	2.2		2.8
08	263	8.7	263	4.3	120	2.8		2.8
09	278	9.7	246	4.6	117	3.1		2.8
10	288	10.4	239	4.7	116	3.3		2.7
11	271	11.8	245	5.2	121	3.5		2.7
12	271	12.2	244	5.2	116	3.6		2.6
13	278	12.0	242	5.1	120	3.6		2.6
14	272	11.5	244	5.2	119	3.4		2.6
15	263	11.6	240	5.1	116	3.3		2.7
16	246	11.1		4.4	118	2.9		2.7
17	255	11.2		4.4	129	2.4		2.7
18	260	10.7			135	1.8		2.8
19	249	9.6						2.7
20	261	8.2						2.6
21	275	7.1						2.5
22	297	6.9						2.4
23	308	6.5						2.4

Time: Local.
Sweep: 0.5 Mc to 16.0 Mc in 4 minutes.
*Average values except f°F2 and fEs, which are median values.

Table 22

Portage la Prairie, Manitoba (49.9°N, 98.3°W) March 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	5.2						2.8
01	300	4.8					2.2	2.6
02	310	4.6					2.5	2.6
03	320	4.4					2.4	2.6
04	300	4.0					2.0	2.6
05	300	3.8					2.0	2.6
06	295	3.8					1.8	2.7
07	250	5.0			130	1.8		3.0
08	250	6.7			120	2.4		3.1
09	230	7.8			110	2.8		3.1
10	230	9.1	210	3.7	105	3.1		3.0
11	240	9.6	220	3.9	100	3.2		3.0
12	230	10.4	200	4.2	100	3.4		2.9
13	230	11.2	200	3.8	110	3.4		2.9
14	230	10.6			110	3.4		2.9
15	235	10.4	235	4.4	110	3.2		2.8
16	230	10.6			110	3.0		2.9
17	240	10.8			110	2.6		3.0
18	240	10.4			125	1.9		3.0
19	230	10.0						3.0
20	230	8.4						(3.0)
21	230	7.4						3.0
22	250	6.2						2.9
23	250	5.6						2.8

Time: 90.0°W.
Sweep: 1.0 Mc to 16.0 Mc in 2½ minutes.

Table 23

St. John's, Newfoundland (47.6°N, 52.7°W) March 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	F4.5						2.6
01	270	F4.2					1.9	2.7
02	270	F3.6					1.7	2.6
03	270	F3.6					1.6	2.6
04	260	F3.9						2.6
05	255	4.3						2.6
06	245	5.2			100		1.6	2.9
07	220	6.6			100	2.2	2.2	3.2
08	210	7.4	230	3.6	100	2.6		3.3
09	210	8.8	200	4.9	100	3.1		3.2
10	220	9.0	200	5.0	100	3.3		3.2
11	220	9.8	210	5.4	100	3.5		3.0
12	240	10.3	200	5.4	100	3.4		3.0
13	220	10.6	210	5.5	100	3.6		3.0
14	225	11.0	200	5.2	100	3.5		3.1
15	210	10.9	210	5.0	100	3.4		3.0
16	210	10.8	210	4.6	100	3.0		3.1
17	210	10.7	210	4.3	100	2.6		3.1
18	220	10.3			100	2.3	1.9	3.2
19	210	9.4						3.1
20	210	8.0					1.5	2.9
21	225	6.9						2.8
22	245	5.7						2.8
23	260	F4.9						2.7

Time: 52.5°W.
Sweep: 1.2 Mc to 20.0 Mc. Manual operation.

Table 24

Wakkanai, Japan (45.4°N, 141.7°E) March 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	6.6						
01	290	7.0						
02	280	6.5						
03	280	6.1						
04	280	6.0						
05	285	6.0						
06	260	7.0						
07								
08								
09	235	11.6					(4.0)	
10	240	12.6					4.0	
11	250	13.3	230		100	3.8	3.9	
12	(235)	(13.0)			(100)	3.9		
13	230	12.3	220		100	3.6		
14	240	12.0	220		110	3.5	4.0	
15	230	11.7			100	3.4	3.0	
16	235	11.0			110	2.7	3.2	
17	220	10.6					2.8	
18	230	9.8						
19	220	8.8						
20	240	7.9						
21	245	7.7						
22	250	7.5						
23	265	7.2						

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc. Manual operation.

Table 25

Peiping, China (39.9°N, 116.4°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		6.4						3.2
01		5.6						3.4
02		5.4						3.5
03		5.5						3.2
04		5.6						3.4
05		5.9						3.4
06		6.0						3.6
07		9.2						3.4
08		10.9						3.6
09		(11.0)						(3.8)
10		11.0						3.6
11		11.1						3.6
12		11.8						3.8
13		11.4						3.6
14		11.4						3.9
15		11.6						3.6
16		11.2						3.5
17		11.2						3.6
18		10.4						3.4
19								
20		9.8						3.3
21		9.0						3.4
22		(8.9)						(3.4)
23		8.1						3.0

Time: 120.0°E.
Sweep: Manual operation.

Table 26

Shibata, Japan (37.9°N, 139.3°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	270	7.5						2.8
01	280	6.8					1.6	2.8
02	270	6.8					1.5	2.8
03	260	6.4						2.8
04	260	6.0						2.7
05	280	6.1						2.7
06	260	7.6			130	E		2.9
07	220	10.9			110	2.4		3.1
08	230	12.9	205		100	3.1		3.1
09	220	13.7	210		100	3.4		3.1
10	220	13.9	220		100	3.7	4.0	3.0
11	230	14.4	215		100		3.7	3.0
12	230	14.6	220		110	4.0	3.6	2.9
13	220	14.4	205		100	3.9	3.3	2.9
14	230	13.8	220		100	3.8		2.9
15	220	13.3	215		105	3.4		2.9
16	230	13.1	220		100	3.3	2.6	2.9
17	225	12.8			100	2.6	2.6	3.0
18	220	11.9					1.9	3.0
19	215	10.2					1.9	2.9
20	235	8.7					1.8	2.8
21	240	8.2						2.9
22	265	8.1						2.8
23	270	7.7						2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 15 minutes. Manual operation.

Table 27

Lanchow, China (36.1°N, 103.8°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	320	7.8						2.6
01	330	7.0						2.5
02	340	7.2						2.5
03	320	6.7						2.5
04	320	6.4						2.6
05	330	6.0						2.5
06	330	6.5						2.5
07	285	9.4			135			2.7
08	280	13.0			130	3.0	3.7	2.7
09	300	13.5	250		130		4.0	2.7
10	300	14.5	250		120		4.2	2.6
11	300	14.5	260		120		4.3	2.6
12	300	14.5	260	6.4	120			2.6
13	300	14.0	260	(6.8)	120			2.6
14	320	13.5	265	7.0	120			2.6
15	320	13.5	260	6.5	120			2.6
16	320	14.0	260	(6.3)	120	(3.4)		2.6
17	300	13.5	265		125	3.0		2.7
18	300	12.5	260		120			2.7
19	300	11.0						2.8
20	300	10.0						2.7
21	300	9.9						2.6
22	300	9.2						2.6
23	320	8.3						2.5

Time: 105.0°E.
Sweep: 2.4 Mc to 14.5 Mc (2.3 Mc to 14.5 Mc in E-layers) in 15 minutes. Manual operation.

Table 28

Tokyo, Japan (35.7°N, 139.5°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	260	7.9						2.8
01	250	7.5						2.8
02	260	7.1						2.8
03	250	6.7						2.8
04	250	6.2						2.6
05	280	6.2						2.6
06	250	7.9						2.9
07	220	10.5			100	2.5		3.2
08	220	12.5			100	3.2		3.1
09	220	13.1	220		100	3.5		3.1
10	230	13.7	210		100	3.8		3.0
11	230	14.2	220		100	3.9		2.9
12	230	14.2	220		100	4.0		2.9
13	230	14.3	210		100	4.0		2.8
14	235	13.5	220	5.5	100	3.8		2.8
15	230	13.4	220		100	3.5		2.8
16	230	13.0	220		100	3.2	3.5	2.8
17	230	12.8			100	2.6	3.0	2.9
18	230	11.7			110	1.7	2.4	3.0
19	220	10.0					2.0	2.9
20	230	8.9						2.9
21	240	8.7						2.8
22	250	8.4						2.8
23	260	8.2						2.7

Time: 135.0°E.
Sweep: 1.5 Mc to 15.0 Mc in 15 minutes. Manual operation.

Table 29

Yamakawa, Japan (32.2°N, 130.6°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	270	9.2						2.8
01	280	8.4						2.8
02	270	7.9						2.8
03	260	7.4						2.8
04	260	6.4						2.7
05	290	5.8						2.6
06	280	6.7						2.7
07	240	9.9			110	2.2	2.5	3.1
08	240	12.1			100	2.8	3.2	3.1
09	230	13.1	230		110	3.2	4.2	3.1
10	240	13.8	230	4.3	100	3.4	4.4	3.0
11	250	14.2	230	4.6	100	3.7	4.8	2.9
12	250	14.5	220	4.9	100	3.8	4.6	2.9
13	250	14.7	220	5.3	100	3.7	4.6	2.8
14	250	14.3	240	5.2	100	3.6	4.4	2.8
15	245	13.9	230	4.8	100	3.4	4.3	2.8
16	250	13.8	240	4.5	110	3.3	4.1	2.7
17	250	13.8	250		110	2.8	3.5	2.8
18	255	13.3	250		110	2.1	2.7	2.9
19	235	12.0					2.4	2.9
20	250	11.2					2.2	2.8
21	265	10.6						2.7
22	260	10.1					2.4	2.8
23	270	9.5						2.8

Time: 135.0°E.
Sweep: 0.6 Mc to 18.5 Mc in 15 minutes. Manual operation.

Table 30

Wuchang, China (30.6°N, 114.4°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	260	9.4						2.8
01	260	9.0						2.9
02	250	8.4						2.9
03	250	7.7						2.9
04	250	6.7						2.8
05	250	6.3						2.7
06	280	6.0						2.6
07	250	9.0			140	2.0		3.0
08	240	12.0			120	2.8		3.1
09	240	13.5	240	5.8	120	3.2		3.0
10	240	14.1	230	5.4	120	3.8		2.9
11	250	14.8	230	5.4	110	3.9		2.9
12	260	15.5	230	5.5	110			2.8
13	270	15.5	230	6.8	120			2.8
14	260	15.0	230	6.6	120			2.8
15	270	15.0	235	6.5	120			2.7
16	260	14.8	240	5.9	120	3.3		2.8
17	250	14.5	240		120	3.0		2.8
18	250	14.5			120	2.3		2.8
19	250	14.0			120	1.7		2.9
20	250	13.5						2.9
21	240	11.8						2.9
22	250	11.5						2.9
23	260	10.0						2.8

Time: 120.0°E.
Sweep: 1.2 Mc to 19.2 Mc. Manual operation.

Table 31

Chungking, China (29.4°N, 106.8°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	270	10.4					3.0	2.6
01	280	9.4					2.8	2.7
02	280	8.8					3.0	2.6
03	260	7.6					3.2	2.7
04	280	6.6					3.0	2.6
05	280	5.7					3.2	2.5
06	280	6.8					4.0	2.7
07	240	10.4	240		100	2.5	4.6	2.9
08	240	12.5	230		90	3.2	5.0	2.9
09	255	13.6	220		90	3.5	5.8	2.8
10	260	15.0	220		95	3.7	6.8	2.8
11	290	15.5	220	6.8	100	3.8	5.0	2.6
12	300	15.9	220	7.4	100	3.9	5.5	2.6
13	325	16.2	220	7.0	110	4.0	4.8	2.5
14	320	16.5	230	7.0	120	3.9	4.8	2.5
15	320	16.8	220	6.6	100	3.6	4.3	2.5
16	300	16.0	240		90	3.2	4.0	2.5
17	270	16.3	240		90	2.8	3.7	2.6
18	260	15.9					3.6	2.6
19	270	16.1					3.2	2.6
20	250	15.3					2.2	2.5
21	260	13.2					2.6	2.5
22	260	12.4					2.8	2.6
23	280	10.8					3.0	2.6

Time: 105.0°E.
Sweep: 1.7 Mc to 20.0 Mc in 15 minutes. Manual operation.

Table 32

Okinawa I. (26.3°N, 127.8°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		13.5					2.9	2.8
01		11.9					2.6	3.0
02		11.1					2.8	3.0
03		8.8					2.8	2.9
04		7.6					2.6	2.7
05		6.7					2.6	2.7
06		6.1					2.8	2.6
07		9.0				2.2	3.2	2.9
08		12.0				2.9	4.2	3.0
09		13.5				3.2	4.6	2.9
10		14.4				3.7	4.8	2.8
11		15.0				3.8	5.0	2.8
12		16.0				4.0	5.2	2.8
13		16.0				4.0	5.2	2.7
14		16.4				3.9	5.0	2.7
15		16.2				3.7	4.8	2.7
16		16.0				(3.5)	4.4	2.7
17		15.6				(3.2)	4.1	2.7
18		15.4				(2.4)	3.3	2.8
19		16.4					3.1	2.8
20		17.5					2.6	(2.7)
21		15.8					2.5	2.8
22		15.4					2.8	2.8
23		14.1					2.6	2.8

Time: 135.0°E.
Sweep: 1.6 Mc to 20.0 Mc. Manual operation.

Table 33

Maui, Hawaii (20.8°N, 156.5°W) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	245	9.5					3.2	2.9
01								
02								
03								
04								
05								
06	325	5.5					2.7	2.7
07	260	8.0					3.3	2.9
08	250	11.0	240	3.7		3.0	3.4	3.0
09	250	12.5	230	4.2		3.4	3.6	2.9
10	240	12.5	230	4.6		3.7	4.0	2.9
11	240	14.5	222	5.0		4.1	3.8	2.8
12	240	14.5	220	5.0		3.7	4.0	2.7
13	240	15.5	225	5.0		4.0	3.5	2.7
14	240	15.0	205	5.0		4.0	3.6	2.7
15	250	15.5	222	4.8		3.8	4.4	2.8
16	250	15.5	225	4.6		3.5	4.4	2.8
17	242	14.5	240	3.9		3.1	4.0	2.8
18	250	14.5	252	3.4		2.7	4.2	2.8
19	240	13.7					4.0	2.9
20	248	13.2					4.0	2.9
21	250	13.0					3.6	2.9
22	250	12.0					3.3	2.9
23	240	10.6					3.2	3.0

Time: 150.0°W.
Sweep: 1.2 Mc to 18.5 Mc in 15 minutes. Manual operation.

Table 34

Johannesburg, Union of South Africa (26.2°S, 28.0°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	260	6.4						2.9
01	265	5.8						2.8
02	260	5.5						2.9
03	260	4.9						2.8
04	270	4.5						2.8
05	280	4.2						2.8
06	270	5.0						2.9
07	230	8.7			100	2.5		3.2
08	230	10.9	220		100	3.2		3.2
09	250	11.8	220		100	3.5		3.0
10	270	12.0	210		100	(3.8)	4.1	2.9
11	290	12.8	210		100	(3.9)	4.2	2.8
12	300	13.0	220		100	(4.0)	4.3	2.8
13	330	13.0	210		100	(3.9)		2.7
14	320	13.0	220	6.6	100	(4.0)		2.7
15	320	13.0	230	6.2	100	(3.8)		2.7
16	300	12.6	230		100	3.5		2.7
17	260	(12.5)	240		100	3.0	3.5	(2.8)
18	240	12.3			100	2.2	3.0	(2.9)
19	230	11.2					2.3	2.9
20	230	9.9						2.9
21	240	9.0						2.9
22	250	8.3					2.4	2.9
23	250	7.1					2.5	2.9

Time: 30.0°E.
Sweep: 2.0 Mc to 15.0 Mc in 8 seconds.

Table 35

Kermadec Is. (29.3°S, 177.9°W) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	285	8.8	290	5.5		2.2		2.8
07	280	10.8	270	5.7	130	2.5	2.9	2.9
08	300	12.1	270	5.8	135	3.2		2.9
09	300	12.7	260	5.9	130	3.5		2.8
10	310	12.9	270	6.2	140	4.0	4.4	2.7
11	325	13.4	270	6.2	130	4.2		2.7
12	325	13.7	265	6.4	135	4.1	4.5	2.6
13	325	13.1	270	6.0	130	4.1	4.4	2.6
14	330	12.8	275	6.1	130	4.0		2.6
15	320	12.4	270	5.9	125	3.6		2.6
16	320	12.2	275	5.8	130	3.2	3.7	2.6
17	300	11.8	280	5.5	140	2.9	3.2	2.6
18	280	11.4	285	5.7	130	2.3		2.7
19	280	10.2						2.6
20								
21								
22								
23								

Time: 180.0°E.
Sweep: Manual operation.

Table 36*

Campbell I. (52.5°S, 169.2°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	300							
07	250	6.6			110	2.5		2.9
08	300	7.4	250	4.8	110	2.9		2.9
09	300	7.8	250	5.3	110	3.0		2.9
10	300	8.2	240	5.1	110	3.1		2.8
11	320	8.6	250	5.4	110	3.2		2.7
12	330	8.8	250	5.6	110	3.3		2.7
13	300	8.9	240	5.6	110	3.5		2.7
14	330	9.2	240	6.0	110	3.1		2.6
15	340	9.4	250	5.5	110	3.0		2.7
16	300	8.6	250	5.0	110	2.9		2.7
17	300	9.1	260	5.0	110	2.6		2.7
18	270	9.3			120	2.3		2.7
19	270	9.4						2.8
20								
21	260	7.9						
22								
23	340							

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc. Manual operation.
*Observations taken on a 16-hour working schedule.

Table 37*

Slough, England (51.5°N, 0.6°W) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	287	4.9					2.4	2.5
01	296	4.7					2.5	2.5
02	303	4.6					2.5	2.4
03	299	4.4					2.4	2.4
04	286	4.0					1.2	2.5
05	273	3.8					2.5	2.6
06	261	3.6						2.6
07	259	6.0	210**	4.0**	144	(1.7)	2.4	2.8
08	236	8.9	275**	3.3**	128	(2.2)		3.1
09	235	10.9	245**	4.2**	119	(2.8)		3.0
10	235	12.5	232	4.3	118	3.1		3.0
11	238	13.0	235	4.4	117	3.3		2.9
12	239	13.2	225	4.4	117	3.4		2.9
13	236	12.9	233	4.4	116	3.3		2.9
14	236	12.7	225	4.2	119	3.2		2.9
15	236	12.2			119	2.9		2.9
16	233	11.9			125	2.5		2.9
17	231	11.1			133	2.0	2.0	2.9
18	229	9.7					2.5	2.9
19	229	8.1					1.8	2.8
20	245	7.0						2.7
21	268	6.2						2.6
22	282	5.6						2.5
23	287	5.4					2.4	2.5

Time: Local.
Sweep: 0.5 Mc to 16.0 Mc in 4 minutes.
*Average values except f°F2 and fEs, which are median values.
**Less than 3 observations.

Table 38

Lanchow, China (36.1°N, 103.8°E) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	330	5.6						2.5
01	320	5.2						2.6
02	330	5.2						2.5
03	320	5.1						2.6
04	310	5.4						2.7
05	320	4.5						2.6
06	325	4.2						2.6
07	280	6.8						2.7
08	240	11.0			150	2.7		2.9
09	255	11.9	240	4.6	130	3.2		2.8
10	240	12.7	210	5.2	120	3.6		2.7
11	270	14.0	240	5.0	120	3.8		2.6
12	280	14.0	240	5.2	120	3.7		2.6
13	280	13.3	240	5.5	120	4.0		2.6
14	280	13.0			120	3.8		2.6
15	280	12.6	240	5.8	130	3.7		2.5
16	280	12.5	240	5.0	140	3.3		2.6
17	260	11.0	240		160	2.8		2.8
18	260	10.5						2.8
19	270	9.6						2.7
20	275	9.0						2.7
21	260	7.4						2.7
22	300	6.5						2.5
23	320	6.1						2.5

Time: 105.0°E.
Sweep: 2.3 Mc to 14.0 Mc in 15 minutes. Manual operation.

Table 39

Brisbane, Australia (27.5°S, 153.0°E) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	8.9						2.6
01	290	8.4					2.6	2.6
02	280	7.9						2.6
03	300	7.3						2.6
04	300	7.0						2.6
05	300	7.0						2.6
06	250	8.0						2.9
07	240	9.3			115	2.8		2.9
08	250	10.3	230		110	3.4		2.8
09	300	10.5	220	5.6	100	3.8	3.8	2.8
10	330	11.2	220	5.8	100	4.0	4.0	2.7
11	340	11.3	210	6.3	100	4.1	4.6	2.7
12	350	11.4	220	6.3	100	4.2	3.8	2.6
13	350	11.5	220	6.4	100	4.2		2.7
14	360	11.2	230	6.4	100	4.1	4.5	2.6
15	345	10.9	230	6.3	100	3.8	3.3	2.6
16	340	10.3	230		110	3.5		2.6
17	250	10.0			110	3.0		2.7
18	270	9.6						2.7
19	270	9.3						2.6
20	300	9.0						2.5
21	310	9.3						2.5
22	310	9.4						2.6
23	300	9.1						2.6

Time: 150.0°E.
Sweep: 2.2 Mc to 12.5 Mc in 2 minutes 30 seconds.

Table 40

Kermadec Is. (29.3°S, 177.9°W) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	290	9.8	285	4.5		2.4		2.8
07	290	10.9	270	5.1	140	3.0		2.8
08	290	11.4	265	5.7	135	3.5		2.8
09	300	12.0	260	5.8	130	3.5		2.7
10	320	12.2	260	6.0	130			2.6
11	340	12.4	265	6.1	125			2.6
12	350	12.7	265	6.2	135			2.6
13	370	12.4	260	6.3	130			2.6
14	370	11.8	265	5.9	140			2.6
15	370	11.5	270	6.0	125	3.9		2.5
16	330	11.2	275	5.4	130	3.5		2.6
17	325	10.8	280	5.5	130	3.1		2.6
18	300	10.8	280	4.6	140	2.5		2.6
19	300	10.4						2.6
20								
21								
22								
23								

Time: 180.0°E.
Sweep: Manual operation.

Table 41

Canberra, Australia (35.3°S, 149.0°E) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	7.7					3.2	2.7
01	300	7.5					2.8	2.7
02	280	7.2					2.7	2.7
03	280	6.7					2.5	2.6
04	295	6.2					2.6	2.6
05	295	6.0						2.7
06	250	6.8				2.1	2.9	2.9
07	250	7.7			110	2.8	3.8	2.9
08	250	8.8	235	4.8	110	3.3	5.8	2.9
09	300	9.2	235	5.2	110	3.5	6.2	2.8
10	310	10.0	220	5.4	110	3.5	6.4	2.8
11	350	10.4	220	5.8	110	3.6	6.4	2.7
12	345	10.4	240	6.0	110	3.8	4.0	2.7
13	375	10.5	240	6.2	110	3.8	4.9	2.7
14	350	10.4	250	6.1	100	3.6		2.7
15	360	10.0	250	6.8	105	3.7	3.7	2.7
16	330	9.3	245	5.6	105	3.5		2.7
17	250	9.2		5.2	105	3.0	3.7	2.7
18	250	8.9			110	2.6	3.3	2.8
19	260	8.8					2.2	2.8
20	260	8.2					2.7	2.7
21	290	7.8					2.3	2.6
22	300	7.9					2.8	2.8
23	300	8.0					2.8	2.6

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 42

Christchurch, New Zealand (43.5°S, 172.7°E) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	7.6					2.5	2.5
01	280	7.0					3.2	2.5
02	280	6.9					2.7	2.6
03	270	6.4					3.0	2.6
04	270	6.1					2.4	2.6
05	260	5.9				1.4	2.4	2.7
06	240	6.4				2.1		2.9
07	230	7.8				2.8	3.8	2.9
08	230	8.4	230	5.0		3.3		2.9
09	255	9.0	220	5.5		3.5	3.9	2.8
10	290	9.2	210	5.5		3.7	4.0	2.8
11	320	9.5	210	6.0		3.8		2.8
12	320	9.6	200	6.0		3.8		2.8
13	330	9.5	220	6.0		3.8		2.6
14	350	9.6	220	6.1		3.7		2.7
15	345	9.4	220	6.2		3.6		2.7
16	300	9.2	230	5.9		3.5		2.7
17	240	9.2	240	5.5		3.2		2.7
18	250	9.3				2.5		2.7
19	255	9.3				1.6	3.0	2.7
20	250	9.2					2.5	2.7
21	270	8.9					3.2	2.6
22	270	8.3					2.8	2.6
23	270	8.1					2.8	2.5

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc.

Table 43*

Campbell I. (52.5°S, 169.2°E) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05		6.0						2.8
06								
07		7.4						2.8
08		7.7						2.8
09		8.0						2.8
10		8.3						2.7
11		8.2						2.7
12		8.5						2.6
13		8.5						2.6
14		8.6						2.6
15		8.5						2.6
16		8.5						2.6
17		8.8						2.6
18		8.7						2.7
19		8.9						2.7
20								
21		8.3						2.6
22								
23		7.1						

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc. Manual operation.
*Observations taken on a 16-hour working schedule.

Table 44*

Slough, England (51.5°N, 0.6°W) January 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	293	3.4					1.1	2.5
01	301	3.3					1.2	2.5
02	310	3.3					1.3	2.5
03	300	3.0					1.1	2.5
04	275	3.0					1.0	2.6
05	272	2.9					0.9	2.6
06	275	2.7						2.7
07	261	3.5				1.4**	1.7	2.6
08	238	6.9			123	1.7	2.5	3.1
09	233	9.6			127	2.3		3.2
10	235	11.2			124	2.7		3.1
11	235	11.8			119	2.9		3.1
12	234	11.4			121	3.0		3.1
13	239	11.1			124	3.0		3.0
14	237	10.9			121	2.7		3.0
15	229	10.5			124	2.4		3.1
16	228	9.8			138	1.9	2.3	3.1
17	225	8.8				1.4	2.3	3.0
18	229	6.9						3.0
19	239	5.6						3.0
20	259	4.6						2.8
21	285	4.1					2.3	2.6
22	294	3.8						2.5
23	301	3.6						2.5

Time: Local.
Sweep: 0.5 Mc to 16 Mc in 4 minutes.
*Average values except f°F2 and fEs, which are median values.
**Less than 3 observations.

Table 45

Peshawar, India (34.0°N, 71.5°E) January 1947

Time	*	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
						**		***
00								
01								
02								
03								
04								
05								
06								
07	270	6.4						
08	300	8.2				2.9		3.1
09	300	9.7				3.1		
10	330	11.0				3.2		
11	330	11.6				3.4		
12	330	11.3				3.5		2.9
13	360	11.3				3.4		
14	360	11.2				3.4		
15	330	11.8				3.4		
16	330	11.0				3.2		2.9
17	330	10.1				3.1		
18	330	8.6				3.0		
19	330	6.5				3.1		
20	330	5.7				3.3		2.9
21	360	4.5				3.4		
22	360	4.0				3.0		
2230	360	3.8			(2300)	2.9		

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes. Manual operation.
*Height at 0.83 f°F2.
**Both normal and abnormal values of E.
***M3000, average values; other columns, median values.

Table 46

Delhi, India (28.6°N, 77.1°E) January 1947

Time	*	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
							**	
00	390	4.4						2.6
01	390	4.0						
02	390	4.0						
03	345	3.6						
04	360	3.5						2.9
05	360	3.5						
06	360	3.4						
07	330	7.0						
08	360	9.5						3.0
09	360	10.5						
10	360	12.0						
11	360	13.0						
12	390	(13.2)						2.8
13	390	(13.6)						
14	390	(13.6)						
15	390	(13.7)						
16	360	(13.5)						2.9
17	360	12.1						
18	360	11.0						
19								
20	360	8.9						2.9
21	360	7.4						
22	390	5.5						
23	390	4.8						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes. Manual operation.
*Height at 0.83 f°F2.
**M3000, average values; other columns, median values.

Table 47

Bombay, India (19.0°N, 73.0°E) January 1947

Time	*	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
							**	
00								2.7
01	390	10.9						
02	360	7.5						
03								
04								2.9
05								
06								
07	360	7.8						
08	360	11.1						2.8
09	390	13.1						
10	390	14.1						
11	420	(14.5)						
12		(14.9)						
13		(15.0)						
14		(15.1)						
15		(15.0)						
16	435	(14.9)						2.6
17	405	(14.8)						
18	420	(14.6)						
19	420	(14.5)						
20	390	(14.1)						2.7
21	390	13.9						
22	390	12.8						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes. Manual operation.
*Height at 0.83 f°F2.
**M3000, average values; other columns, median values.

Table 48

Madras, India (13.0°N, 80.2°E) January 1947

Time	*	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06								
07	420	8.6						
08	480	10.5						
09	495	11.4						
10	540	11.6						
11	600	11.4						
12	600	11.4						
13	600	11.6						
14	630	11.6						
15	645	11.8						
16	660	11.9						
17	645	11.9						
18	660	12.1						
19	630	11.2						
20	540	11.0						
21	570	11.0						
22	540	11.2						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes. Manual operation.
*Height at 0.83 f°F2.

Table 49

Brisbane, Australia (27.5°S, 153.0°E) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280	9.5					2.7	2.7
01	275	8.4						2.6
02	300	7.9						2.6
03	300	7.6						2.6
04	300	7.0						2.6
05	280	6.9						2.7
06	260	7.6				2.5		2.9
07	250	8.3	230	4.6	115	3.0	5.2	2.8
08	320	9.3	220	5.2	110	3.5	5.4	2.7
09	360	9.4	220	5.7	100	3.8	5.2	2.6
10	370	9.8	210	6.0	100	4.0	5.5	2.6
11	390	10.3	210	6.0	100	4.1	5.1	2.6
12	390	10.8	210	6.0		4.2	5.2	2.6
13	360	10.5	210	6.0	100	4.1	5.5	2.6
14	370	10.5	210	6.0	105	4.0	5.2	2.6
15	370	10.0	220	5.7	100	3.8	5.2	2.6
16	370	9.3	210	5.6	110	3.5	5.5	2.6
17	325	9.0	240		110	3.0	5.1	2.6
18	270	8.8					4.1	2.5
19	290	8.8					3.3	2.6
20	310	9.0					3.8	2.5
21	300	9.2					2.7	2.6
22	305	9.3					3.2	2.6
23	300	9.3					3.2	2.7

Time: 150.0°E.
Sweep: 2.2 Mc to 12.5 Mc in 2 minutes 30 seconds.

Table 50

Kermadec Is. (29.3°S, 177.9°W) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	300	9.6	275	4.2	130	2.5		2.7
07	300	10.3	270	4.8	130	3.0		2.8
08	325	10.8	270	5.3	130	3.6		2.7
09	330	11.5	275	5.9	125	3.8		2.6
10	340	D	250	5.8	125	4.3		2.6
11	350	12.2	260	6.0	125	B		2.6
12	390	12.2	260	6.0	130	4.2		2.5
13	375	12.2	260	6.0	130	B		2.6
14	375	10.9	270	5.8	130	4.2		2.6
15	370	10.3	270	5.7	125	4.0		2.6
16	365	9.6	270	5.5	125	3.7		2.6
17	330	9.2	265	5.1	130	3.1		2.6
18	325	9.2	275	4.3	130	2.5		2.5
19	325	9.6	335	4.7				2.5
20								
21								
22								
23								

Time: 180.0°E.
Sweep: Manual operation.

Table 51

Canberra, Australia (35.3°S, 149.0°E) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	260	8.0					3.7	2.8
01	250	7.5					3.1	2.8
02	260	7.0					3.0	2.7
03	260	6.5					2.9	2.6
04	260	6.0					2.6	2.6
05	265	6.0					2.3	2.5
06	250	6.0			100	2.3	3.3	3.0
07	230	7.0	212	4.5	100	3.0	3.6	3.0
08	300	7.5	202	4.7	100	3.4	4.4	2.9
09	400	8.3	200	5.5	100	3.8	6.4	2.7
10	375	8.1	200	5.6	100	3.9	5.6	2.7
11	385	8.8	200	5.8	100	4.0	5.5	2.7
12	400	9.1	200	5.9	100	4.0	6.0	2.6
13	390	9.0	200	6.0	100	4.0	6.5	2.6
14	390	9.0	230	5.8	100	4.0	6.4	2.6
15	380	8.5	200	5.6	100	3.9	4.0	2.7
16	350	8.4	202	5.5	100	3.5	5.0	2.7
17	225	8.0	215	4.8	100	3.3	4.0	2.7
18	240	8.0			100	2.7	3.5	(2.8)
19	255	7.5					3.5	2.8
20	270	7.8					3.6	2.6
21	295	8.0					3.2	(2.6)
22	300	8.0					3.8	(2.8)
23	272	8.0					3.6	(2.8)

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 52*

Campbell I. (52.5°S, 169.2°E) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05		6.7						2.7
06								
07		7.7						2.7
08		7.8						2.7
09		7.5						2.7
10		7.9						2.6
11		8.0						2.6
12		7.9						2.6
13		7.8						2.6
14		7.8						2.5
15		8.1						2.6
16		8.1						2.6
17		8.2						2.7
18		8.3						2.6
19		8.3						2.6
20								
21		8.3						2.5
22								
23		8.7						

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc. Manual operation.
*Observations taken on a 16-hour working schedule.

Table 53

Peshawar, India (34.0°N, 71.5°E) December 1946

Time	*	f°F2	h'F1	f°F1	h'E	f°E**	fEs	F2-M3000***
00								
01								
02								
03								
04								
05								
06								
07								
08	300	9.3				3.0		3.2
09	300	10.5				3.1		
10	300	11.0				3.2		
11	330	11.4				3.4		
12	360	11.9				3.4		2.9
13	360	11.7				3.3		
14	360	11.6				3.3		
15	330	11.0				3.3		
16	330	10.8				3.3		2.9
17	300	9.2				3.1		
18	300	8.0				2.8		
19	300	6.5				2.8		
20	300	5.6				2.7		3.0
21	330	4.4						
22	330	3.7						
2230	360	3.4						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes. Manual operation.
*Height at 0.83 f°F2.
**Includes both normal and abnormal values of f°E.
***M3000, average values; other columns, median values.

Table 54

Delhi, India (28.6°N, 77.1°E) December 1946

Time	*	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000**
00	360	4.7						3.0
01	360	4.5						
02	360	4.2						
03	(330)	(3.9)						
04	345	3.8						3.1
05	360	3.7						
06	360	4.2						
07	330	7.4						
08	300	10.6						3.2
09	330	11.6						
10	360	12.1						
11	360	12.0						
12	360	(12.3)						2.8
13	360	(12.5)						
14	390	12.5						
15	360	(12.4)						
16	360	(12.2)						2.9
17	360	11.9						
18	(330)	(10.2)						
19	(360)	(10.2)						
20	330	8.5						3.0
21	330	7.5						
22	360	6.1						
23	360	5.1						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes. Manual operation.
*Height at 0.83 f°F2.
**M3000, average values; other columns median values.

Table 55

Bombay, India (19.0°N, 73.0°E) December 1946

Time	*	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000**
00								2.9
01	(360)	(10.3)						
02	(330)	(9.3)						
03								
04								
05								
06								
07	330	8.3						
08	360	11.3						3.0
09	360	13.4						
10	390	13.9						
11	405	(14.6)						
12	(420)	(14.9)						
13	(420)	(15.0)						
14	(420)	(15.1)						
15	(420)	(15.2)						
16		(15.1)						
17		(15.1)						
18		(15.1)						
19		(15.1)						
20		(14.8)						
21		(14.6)						
22	(360)	14.1						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes. Manual operation.
*Height at 0.83 f°F2.
**M3000, average values; other columns, median values.

Table 56

Madras, India (13.0°N, 80.2°E) December 1946

Time	*	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06								
07	480	8.8						
08	510	11.0						
09	600	12.0						
10	660	12.6						
11	720	13.4						
12	720	13.2						
13	765	13.2						
14	750	13.0						
15	735	13.1						
16	720	12.6						
17	720	12.0						
18	660	(11.8)						
19	(600)	(11.0)						
20	540	10.8						
21	540	11.0						
22		(10.0)						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes. Manual operation.
*Height at 0.83 f°F2.

Table 57

Calcutta, India (22.6°N, 88.4°E) October 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11		(12.8)				4.2		
12	300	12.8				4.2		3.2
13		(12.9)				4.0		
14		(13.0)				3.9		
15	300	(12.0)				3.7		3.1
16		(12.1)				3.2		
17						3.2		
18						2.0		
19								
20								
21								
22								
23								

Time: Local.
*Parabolic-layer method.

Table 58

Falkland Is. (51.7°S, 57.7°W) August 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		3.2						2.7
01		3.2						
02		3.2						2.6
03		3.1						
04		3.4						3.0
05		3.2						
06		3.2						3.2
07		5.5						
08		7.0						3.4
09		8.0				3.5		
10		8.3				4.0		3.5
11		8.0				4.1		
12		8.4				3.9		3.4
13		7.8				3.3		
14		8.2				2.4		3.4
15		7.3						
16		6.3						3.4
17		5.7						
18		4.7						3.2
19		4.2						
20		3.4						3.0
21		3.0						
22		3.0						2.6
23		3.2						

Time: 60.0°W.
Sweep: Manual operation.
*Data labeled "Extent of E."

Table 59

Bukhta Tikhaya, U.S.S.R. (80.3°N, 52.7°E) May 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	240	4.9						
01	220	4.7						
02								
03								
04								
05								
06								
07								
08								
09								
10	250	4.7						
11								
12	240	4.7						
13								
14	230	4.8						
15								
16								
17								
18								
19	240	5.6						
20								
21								
22	250	5.0						
23								

Time: 60.0°E.
Sweep: 1.5 Mc to 9.5 Mc in 5 to 10 minutes. Manual operation.

Table 60 (Supersedes Table 24, CRPL-F24)

Sverdlovsk, U.S.S.R. (56.7°N, 61.1°E) May 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	290	5.7						
01	300	5.4						
02	300	5.0						
03	300	4.6						
04	300	5.1	260		150	1.8		
05	290	5.8	240	3.9	130	2.2		
06	330	6.3	240	4.2	120	2.6		
07	340	6.6	230	4.4	120	2.9		
08	360	6.6	220	4.6	120	3.2		
09	360	6.9	220	4.8	110	3.3		
10	350	7.2	220	5.0	110	3.4		
11	350	7.6	210	5.0	110	3.4		
12	340	7.5	220	5.0	110	3.5		
13	340	7.4	220	4.9	110	3.5		
14	310	7.6	220	4.8	110	3.4		
15	320	7.0	220	4.7	120	3.3		
16	300	7.2	230	4.6	120	3.1		
17	280	7.0	230	4.3	120	2.9		
18	260	6.8	240	(3.9)	130	2.6		
19	260	6.9			140	2.1		
20	270	6.7			140	1.8		
21	270	6.8						
22	280	6.7						
23	280	6.2						

Time: 60.0°E.
Sweep: 1.5 Mc to 14.0 Mc in 5 to 13 minutes. Manual operation.

Table 61

Tomsk, U.S.S.R. (56.5°N, 84.9°E) May 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	240	6.0						
01	250	5.5						
02	260	5.1						
03	260	4.8						
04	250	4.8				1.5		
05	270	5.2	230	3.6	110	2.0		
06	280	5.8	230	4.0	100	2.4		
07	280	6.0	220	4.2	100	2.8		
08	300	6.2	220	4.5	100	3.0		
09	280	6.2	220		100	3.2		
10	300	6.6	220	4.8	100	3.3		
11	290	7.1	200	4.7	100	3.4		
12								
13	300	7.5	200	4.6	100			
14	300	7.4	200	4.6	100	3.5		
15	280	7.6	210	4.4	100	3.4		
16	280	7.7	210	4.2	100	3.2		
17	250	7.4	210	4.1	100	3.0		
18	250	7.2	220	3.9	100	2.7		
19	220	7.1			100	2.4		
20	230	7.0			100	2.0		
21	220	7.0				1.5		
22	230	7.0						
23	230	6.4						

Time: 90.0°E.
Sweep: 1.2 Mc to 10.0 Mc in 5 to 10 minutes. Manual operation.

Table 62

Moscow (Krasnaja Pakhra), U.S.S.R. (55.5°N, 37.3°E) May 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	270	5.4						2.8
01	270	5.1						2.8
02	270	4.9						2.7
03	270	4.6						2.8
04	260	5.1	220					2.9
05	280	5.7	210	3.8	100	2.4		2.9
06	320	6.2	210	4.2	100	2.7	3.0	2.9
07	340	6.5	200	4.5	90	3.0	3.1	2.9
08	340	6.8	200	4.7	90	3.1	3.6	2.9
09	330	7.5	200	4.8	90	3.2	4.0	2.9
10	340	7.4	200	4.9	90	3.4	3.7	2.9
11	310	7.8	200	4.9	90	3.5		2.9
12	320	7.8	200	4.8	90	3.5		3.0
13	310	7.5	200	4.9	90	3.4		3.0
14	300	7.3	200	4.8	90	3.3		3.0
15	300	7.0	200	4.6	90	3.2		3.1
16	280	7.2	210	4.5	90	3.0		3.0
17	270	7.3	210	4.3	90	2.7	3.3	3.0
18	260	7.4	220		100	2.4	3.4	3.1
19	240	7.4			100	2.3	3.0	3.0
20	230	7.6						(3.0)
21	240	7.4						(3.0)
22	250	6.5						(2.9)
23	260	5.8						(2.7)

Time: 30.0°E.
Sweep: 1.8 Mc to 10.0 Mc in 10 minutes. Manual operation.

Table 63 (Supersedes table 25, CRPL-F24)

Alma Ata, U.S.S.R. (43.2°N, 76.9°E) May 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	240	6.3						
01	240	6.3						
02	240	6.1						
03	260	5.8						
04	240	5.8						
05	240	6.1			100	2.5		
06	210	7.1			100	2.4		
07	210	7.7	210	3.8	100	2.8		
08	220	8.8	200	5.0	110	3.4		
09	240	9.0	220	5.1	100	3.6		
10	240	9.3	200	5.2	100	5.7*		
11	260	9.7	200	5.4	100	3.8		
12	250	9.6	210	5.5	100	4.0		
13	280	9.5	220	5.4	100	4.0		
14	260	9.7	220	5.5	100	4.4		
15	240	9.4	220	5.0	100	3.9		
16	240	8.4	200	4.9	100	3.6		
17	240	8.6	200	4.6	100	3.4		
18	240	8.5	220	4.4	100	3.0		
19	240	8.3			110	2.6		
20	240	7.4			120			
21	240	7.0						
22	240	6.8						
23	240	6.6						

Time: 75.0°E.
Sweep: 2.0 Mc to 14.0 Mc in 10 to 20 minutes. Manual operation.
*As reported.

Table 64 (Supersedes table 27, CRPL-F23)

Bukhta Tikhaya, U.S.S.R. (80.3°N, 52.7°E) April 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	240	5.1						
01	240	4.8						
02								
03								
04								
05								
06								
07								
08								
09								
10	230	5.8						
11								
12	240	6.0						
13								
14	220	6.0						
15								
16								
17								
18								
19	220	6.1						
20								
21								
22	240	5.6						
23								

Time: 60.0°E.
Sweep: 1.5 Mc to 9.5 Mc in 5 to 10 minutes. Manual operation.

Table 65 (Supersedes table 27, CRPL-F24)

Leningrad (WETKAS), U.S.S.R. (60.0°N, 30.3°E) April 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	4.8						
01	320	4.4						
02	310	4.0						
03	320	4.1						
04	300	3.9			150	1.7		
05	270	4.2	230	2.4	140	1.7		
06	270	5.0	220	3.5	120	1.9		
07	250	5.5	250	3.7	120	2.4		
08	260	6.3	240	4.1	120	2.7		
09	260	7.0	220	4.5	120	2.9		
10	300	7.4	220	4.6	120	3.0		
11	280	7.5	220	4.8	120	3.4		
12	300	7.8	220	4.8	110	3.3		
13	290	7.8	220	4.8	120	3.2		
14	300	7.8	220	4.6	120	3.1		
15	270	7.9	220	4.7	120	3.1		
16	250	7.6	220	4.0	120	2.9		
17	250	7.4	240	3.7	120	2.5		
18	250	7.2	240	3.3	120	2.1		
19	250	7.0			120	1.6		
20	250	6.9			130	1.9		
21	250	6.4						
22	260	5.8						
23	270	5.2						

Time: 30.0°E.
Sweep: 1.5 Mc to 9.0 Mc in 5 to 10 minutes. Manual operation.

Table 66 (Supersedes table 20, CRPL-F23)

Sverdlovsk U.S.S.R. (56.7°N, 61.1°E) April 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280	5.1						
01	290	4.8						
02	290	4.5						
03	300	4.1						
04	300	3.9						
05	280	4.6			(150)	1.8		
06	250	5.3	(250)		130	2.2		
07	240	6.4	230	(4.2)	120	2.6		
08	260	7.0	230	4.2	120	2.9		
09	260	7.9	220	4.5	120	3.1		
10	270	8.7	220	4.6	120	3.3		
11	270	9.0	210	4.7	110	3.4		
12	270	9.1	210	4.7	120	3.4		
13	260	9.3	220	4.6	120	3.4		
14	270	8.9	220	4.5	120	3.3		
15	250	8.5	220	4.4	120	3.2		
16	240	8.6	(230)		120	3.0		
17	240	8.6			120	2.6		
18	240	8.0			130	2.1		
19	250	7.9			160	1.9		
20	240	7.5						
21	250	6.7						
22	270	5.9						
23	270	5.4						

Time: 60.0°E.
Sweep: 1.5 Mc to 14.0 Mc in 5 to 13 minutes. Manual operation.

Table 67 (Supersedes table 21, CRPL-F23)

Tomsk, U.S.S.R. (56.5°N, 84.9°E) April 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	270	5.4						
01	280	5.0						
02	270	4.7						
03	280	4.4						
04	280	4.1						
05	270	4.4						
06	250	5.2			110	1.9		
07	250	6.0	230	3.6	110	2.4		
08	260	6.8	230	3.8	100	2.8		
09	240	8.0	210	3.8	110	3.0		
10	240	8.4	220	4.0	100	3.2		
11	240	9.0	220	4.1	100	3.3		
12	260	9.0	210	4.1	100	3.3		
13	260	9.1	220	4.0	100	3.3		
14		9.3	220	4.0	100	3.2		
15	270	9.0			100	3.0		
16	250	8.8						
17	250	8.4			100	2.8		
18	240	8.2			100	2.4		
19	240	8.0			100	2.0		
20	230	7.6						
21	230	7.2						
22	250	6.6						
23	260	5.8						

Time: 90.0°E.
Sweep: 1.2 Mc to 10.0 Mc in 5 to 10 minutes. Manual operation.

Table 68 (Supersedes table 52, CRPL-F25)

Moscow (Krasnaja Paldna), U.S.S.R. (55.5°N, 37.3°E) April 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280	5.0						2.7
01	300	4.5						2.7
02	300	4.2						2.7
03	300	3.8						2.7
04	280	3.9						2.8
05	240	4.8	230	3.0				3.0
06	230	5.6	210	3.6	100	2.4		3.0
07	270	6.3	220	4.2	100	2.7		3.0
08	280	7.1	220	4.3	100	3.0		3.0
09	280	8.2	200	4.5	90	3.1		3.0
10	280	8.7	200	4.4	90	3.2		3.0
11	280	9.0	200	4.6	90	3.3		3.0
12	280	9.0	200	4.6	90	3.3		3.0
13	280	8.6	210	4.6	90	3.2		3.0
14	270	8.4	210	4.4	90	3.2		3.0
15	260	8.5	200	4.2	100	3.0		3.1
16	230	8.4	200		100	2.8		3.1
17	230	8.2			100	2.4		3.1
18	220	8.4			100	2.4		3.1
19	220	8.1						3.0
20	220	7.3						3.1
21	230	6.2						3.0
22	250	5.4						2.8
23	260	5.3						2.7

Time: 30.0°E.
Sweep: 1.8 Mc to 10.0 Mc in 10 minutes. Manual operation.

Table 69 (Supersedes table 28, CRPL-F24)

Alma Ata, U.S.S.R. (43.2°N, 76.9°E) April 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	220	5.6						
01	200	5.4						
02	200	5.3						
03	220	5.2						
04	220	4.9						
05	220	5.2						
06	200	6.8			100	2.2		
07	200	8.0	200	(5.1)	100	2.6		
08	200	8.7	200	4.7	100	3.0		
09	200	9.6	200	4.8	(100)	3.3		
10	220	9.2	200	4.9	(110)	3.4		
11	200	10.0	200	5.7	100	3.6		
12	220	10.3	200	5.5	(110)	3.7		
13	220	10.5	200	5.3	(100)	3.7		
14	240	10.6	200	5.1	100	3.6		
15	240	11.0	200	5.5	100	3.4		
16	220	9.8	200	5.2	100	3.2		
17	200	9.0	(190)	(4.4)	100	3.0		
18	200	8.8			120	2.6		
19	200	8.2				2.5		
20	200	7.2						
21	210	6.5						
22	210	6.0						
23	220	6.0						

Time: 75.0°E.
Sweep: 2.0 Mc to 14.0 Mc in 10 to 20 minutes. Manual operation.

Table 70*

San Juan, Puerto Rico (18.4°N, 66.1°W) April 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		4.9						
01		4.8						
02		4.6						
03		4.1						
04		4.0						
05		3.8						
06		4.2	237	3.1				
07	273	5.6	233	3.5			5.7	
08	300	6.0	232	3.4			5.4	
09	325	6.3	238	4.1		3.2	5.0	
10	377	6.7	247	4.4		3.4	5.2	
11	374	7.7	245	4.6		3.6	5.3	
12	336	8.6	249	4.6		3.6	5.4	
13	317	9.1	239	4.6		3.6	5.5	
14	308	9.3	249	4.5		3.6	5.4	
15	300	9.0	248	4.4		3.4	5.2	
16	287	9.1		4.0		3.2	4.8	
17	275	8.6		3.6			4.6	
18	252	8.5		3.2			4.4	
19	251	7.0					4.1	
20		5.9					5.4	
21		5.3						
22		5.0						
23		4.9						

Time: 60.0°W.
Sweep: 3.0 Mc to 12.0 Mc in 14 minutes.
*Average values.

Table 71*

San Juan, Puerto Rico (18.4°N, 66.1°W) March 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		4.2					3.6	
01		4.2					6.1	
02		4.4					3.7	
03		4.1						
04		3.8						
05		3.5					6.8	
06		3.4					5.9	
07	264	5.0						
08	266	6.0		3.1		2.4		
09	295	6.7	228	3.7		3.1	4.9	
10	314	7.4	233	4.4		3.4	5.2	
11	310	8.1	232	4.6		3.6		
12	314	8.4	235	4.7		3.7	5.3	
13	305	8.9	242	4.6		3.7	5.0	
14	299	9.0	240	4.6		3.6	4.2	
15	292	9.2	238	4.5		3.4	5.2	
16	281	8.9	246	4.0		3.1	4.6	
17	269	8.7	247	3.5		2.7	4.4	
18	250	7.9		3.1			4.1	
19	248	6.7					4.6	
20		5.4					5.6	
21		4.5					4.7	
22		4.4					4.8	
23		4.4					3.4	

Time: 60.0°W.
Sweep: 3.0 Mc to 12.0 Mc in 14 minutes.
*Average values.

Table 72*

San Juan, Puerto Rico (18.4°N, 66.1°W) February 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		4.4					4.6	
01		3.8					4.2	
02		3.8					5.8	
03		3.8					4.1	
04		3.8					3.7	
05		4.0					4.7	
06		4.0						
07		4.0						
08		3.6					5.6	
09		3.4					5.2	
10		3.4					4.7	
11	286	4.4						
12	272	5.9		3.3				
13	298	6.6	233	3.9		3.0		
14	296	7.7	239	4.4		3.4		
15	277	8.3	234	4.6		3.5	4.7	
16	285	7.9	232	4.6		3.6	5.4	
17	296	7.4	224	4.6		3.6	5.4	
18	302	7.6	230	4.5		3.6	5.0	
19	291	7.6	236	4.4		3.4	5.2	
20	284	7.1	232	3.9		3.1	5.2	
21	274	7.0		3.3			4.9	
22	248	6.8					5.1	
23	251	5.6					5.3	

Time: 0.0°.
Sweep: 3.0 Mc to 12.0 Mc in 14 minutes.
*Average values.

Table 73*

San Juan, Puerto Rico (18.4°N, 66.1°W) January 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.5						
01		3.6					5.8	
02		3.8					6.1	
03		3.6					11.2	
04		3.7					10.5	
05		3.9					4.8	
06		4.2					9.2	
07		4.2					7.6	
08		3.7						
09		3.5					5.2	
10		3.3					5.0	
11	291	4.0						
12	259	5.6		3.2		2.7		
13	285	6.4	244	3.8		3.0		
14	285	7.1	240	4.0		3.3	4.9	
15	282	7.1	234	4.3		3.4	4.9	
16	291	6.8	222	4.4		3.5	4.4	
17	304	6.7	226	4.4		3.5	5.4	
18	289	6.8	228	4.3		3.4	7.0	
19	301	6.9	241	4.1		3.2	6.7	
20	290	6.7	247	3.8		3.0	5.4	
21	270	6.9		3.3		2.8	5.7	
22	247	6.5					5.1	
23	252	4.6					4.6	

Time: 0.0°.
Sweep: 3.0 Mc to 12.0 Mc in 14 minutes.
*Average values.

TABLE 74

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'F2 (Characteristic), km (Unit), May (Month), 1947

National Bureau of Standards (Institution)

Observed at Washington, D.C

Lat. 39.0°N, Long. 77.5°W

75° W Mean Time

Scaled by: A.H.S

Calculated by: B.W.D, V.C.A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							290	(320)	300	N	C	470	430	450	(380)	430	[410]C	(380)	(320)					
2							290	(280)	360	380	(400)	(430)	[460]N	470	450	420	420	(350)	(360)					
3							280	(290)	260N	N	(420)	(400)	420	[450]E	[470]E	(470)	(450)	420	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	(280)	[320]C	(350)	(360)	[360]C	340	[310]C	(270)	C					
6							250	250	280	C	C	C	430	C	N	B	(370)	330	270					
7							290	(280)	320	(400)	C	N	(410)	420	(410)	(380)	(400)	340	(290)					
8							280	280	340	340	400	350	350	C	N	N	370	370	A					
9							C	C	C	330	(370)	(320)	[320]E	(320)	[340]N	(360)	360	(340)	(270)					
10							280	(320)	(260)	(340)	(320)	(380)	400	420	(470)	(420)	(420)	C	C					
11							300K	NK	NK	(440)K	(540)K	NK	GK	(520)K	520K	460K	(400)K	NK	AK					
12							CK	CK	(580)K	(530)K	GK	NCK	(620)K	(690)K	(600)K	(570)K	530K	450K	(380)K					
13							AK	420	AK	580K	540K	500K	500K	520K	470K	510K	(450)K	400K	320K					
14							NK	(600)K	GK	GK	GK	GK	GK	GK	GK	GK	480K	(420)K	400K					
15							NK	NK	CK	(350)K	NK	NK	BK	(400)K	(350)K	(400)K	420K	380K	CK					
16							NK	NK	GK	GK	GK	NGK	GK	CK	(570)K	(600)K	(550)K	[490]K	(420)K					
17							(380)K	NK	(600)K	CK	(770)K	CK	CK	CK	GK	GK	GK	(470)K	400K					
18							390	(380)	(410)	(420)	(420)	480	(430)	(430)	[410]N	[380]C	(350)	330	C					
19							C	C	C	C	C	C	(610)	C	C	C	550	(540)	470					
20							400	(400)	(350)	C	C	C	C	C	C	N	N	520	(520)					
21							N	C	C	B	B	C	N	N	B	C	N	(490)	C					
22							C	(320)	(320)	A	C	C	C	N	B	B	(450)	(400)	400					
23							(360)	C	C	C	C	C	C	C	C	N	A	A	340					
24							CK	CK	CK	CK	BK	BK	BK	BK	BK	530K	NK	NK	(380)K					
25							EK	NK	NK	NK	NK	CK	BK	BK	BK	BK	590K	CK	AK					
26							CK	BK	BK	BK	BK	BK	BK	BK	BK	CK	BK	NK	(530)K					
27							CK	NK	CK	CK	CK	NK	NK	CK	NK	NK	CK	(600)K	AK					
28							A	N	N	(510)	N	A	N	N	N	C	C	C	C					
29							C	C	C	C	C	C	C	C	C	C	C	C	C					
30							(310)E	NK	NK	BK	BK	BK	CK	CK	CK	NK	(500)K	(430)K	(340)K					
31							N	N	N	C	C	430	C	C	C	460	[450]C	440	(390)					
Median							290	(320)	345	420	(420)	430	430	(458)	(470)	460	(435)	(410)	(380)					
Count							13	12	14	13	13	13	16	13	15	17	23	22	18					

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 782818

TABLE 75

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), May (Month), 1947

Observed at Washington, D.C.

Lat 39.0° N, Long 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: A. H. S.

Calculated by: B. W. D., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							7.4	8.0	8.9	9.0	9.3	9.8	10.3	10.1	9.8	10.2	9.5	9.3	9.4					
2							8.4	9.3	9.9	10.1	10.5	10.7	10.5	10.1	10.1	10.2	9.8	9.7	9.6					
3							8.2	[9.1]^{C}	9.6^{H}	9.7	10.7	(10.7)^{J}	10.5	[10.4]^{C}	10.2	9.9	9.7	9.7	9.6					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	10.8	10.7	10.6	10.5	10.5	10.1	10.2	9.8	9.7					
6							9.0	9.8	10.5	11.0	(11.3)^{J}	[11.2]^{C}	11.1	11.4	11.1	[10.5]^{B}	10.2	10.2	10.0					
7							7.3	7.5	8.2	(8.7)	9.3	9.2	9.8	9.6	(9.8)	9.8	9.5	9.2	9.4					
8							8.6	8.5	9.2	9.6	9.7	10.2	(10.1)	[10.2]^{C}	10.2	(10.3)^{J}	10.1	9.8	9.4					
9							C	C	C	10.8	11.2	11.2	[11.2]^{C}	11.4	11.2	10.7	10.4	[10.4]^{N}	(10.4)^{J}					
10							8.2	9.3	9.8	10.5	10.6	10.6	10.3	10.5	10.2	10.2	10.3	10.4	10.3					
11							6.7^{K}	(6.6)^{K}	[6.3]$^{N}_{K}$	(6.0)$^{F}_{K}$	6.4^{K}	N^{K}	<5.5$^{G}_{K}$	6.7^{K}	(6.8)^{K}	7.3^{K}	[7.1]$^{E}_{K}$	7.8^{K}	7.7^{K}					
12							5.9^{K}	6.1^{K}	6.1^{K}	6.3^{K}	<(5.4)$^{G}_{K}$	N^{K}	(6.3)^{K}	6.4^{K}	(6.4)^{K}	6.5^{K}	6.6^{K}	6.9^{K}	7.0^{K}					
13							6.6^{K}	6.6^{K}	6.5^{K}	6.3^{K}	6.6^{K}	6.8^{K}	6.9^{K}	7.0^{K}	7.4^{K}	7.4^{K}	7.9^{K}	9.1^{K}	9.6^{K}					
14							5.0^{K}	5.2^{K}	<4.8$^{G}_{K}$	<4.8$^{G}_{K}$	<5.0$^{G}_{K}$	<(5.1)$^{G}_{K}$	<5.3$^{G}_{K}$	<5.1$^{G}_{K}$	<5.2$^{G}_{K}$	<4.9$^{G}_{K}$	6.4^{K}	6.4^{K}	6.5^{K}					
15							N^{K}	NF^{K}	C^{K}	8.7^{K}	N^{K}	N^{K}	B^{K}	N^{K}	8.9^{K}	8.8^{K}	8.4^{K}	9.2^{K}	9.5^{K}					
16							5.0^{K}	5.1^{K}	<4.7$^{G}_{K}$	<(5.0)$^{G}_{K}$	<5.2$^{G}_{K}$	<(5.3)$^{G}_{K}$	<(5.4)$^{G}_{K}$	(6.2)^{K}	[6.4]$^{N}_{K}$	(6.5)^{K}	6.5^{K}	6.6^{K}	7.0^{K}					
17							6.1^{K}	6.0^{K}	(6.0)^{K}	(6.0)$^{N}_{K}$	(6.0)$^{F}_{K}$	C^{K}	C^{K}	C^{K}	<(5.2)$^{G}_{K}$	<(5.2)$^{G}_{K}$	<(5.2)$^{N}_{K}$	(5.0)^{K}	7.0^{K}					
18							6.3	6.5	(7.5)^{J}	8.3	8.5	8.8	8.9	9.1	[9.2]^{N}	(9.3)	(9.2)	9.1	9.0					
19							C	C	C	C	C	C	N	C	C	6.9	6.9	7.4	7.0					
20							6.2	6.5	6.3	(5.9)	C	C	C	C	C	7.1	(6.6)	7.3	7.0					
21							(6.6)	7.4	7.9	[8.1]^{B}	[8.4]^{B}	9.1	8.9	8.7	[8.6]^{B}	8.5	[8.5]^{N}	8.5	8.6					
22							8.8	9.8	10.5	11.2	11.1	11.0	11.0	11.0	[10.7]^{B}	[10.2]^{B}	9.9	9.8	9.7					
23							7.3	8.0	9.0	C	C	C	C	C	C	(9.0)	A	N	9.5					
24							C^{K}	C^{K}	F^{K}	C^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	6.7^{K}	(6.7)^{K}	6.7^{K}	7.0^{K}					
25							6.5^{K}	N	N^{K}	N^{K}	N^{K}	N^{K}	B^{K}	B^{K}	b^{K}	B^{K}	6.9^{K}	[6.9]$^{N}_{K}$	7.0^{K}					
26							5.1^{K}	B	B^{K}	B^{K}	B^{K}	B^{K}	b^{K}	b^{K}	B^{K}	C^{K}	B^{K}	N^{K}	6.6^{K}					
27							C^{K}	(5.3)^{K}	C^{K}	C^{K}	C^{K}	N^{K}	N^{K}	C^{K}	N^{K}	N	C^{K}	6.7^{K}	A^{K}					
28							8.2	8.7	(9.2)	9.6	(9.6)	9.9	(9.9)	9.9	(9.8)	C	C	C	C					
29							C	C	C	C	C	C	C	C	C	C	C	C	C					
30							(7.3)^{K}	(6.7)$^{J}_{K}$	N^{K}	B^{K}	B^{K}	<(5.6)$^{G}_{K}$	C^{K}	C^{K}	C^{K}	N^{K}	C^{K}	C^{K}	(7.8)^{K}					
31							8.7	[8.8]^{N}	(9.0)	(9.6)	9.8	10.0	C	C	C	(9.5)^{J}	[9.1]^{C}	9.0	9.2					
Median							7.3	7.4	8.6	8.7	9.4	10.0	10.0	10.0	9.8	9.2	8.8	9.1	9.2					
Count							23	22	20	21	20	18	18	18	20	24	24	25	27					

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1947 O - 705318

TABLE 76

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), May (Month), 1947

Observed at Washington, D.C.

Lat. 39.0°N, Long. 77.5°W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: A. H. S.

Calculated by: B. W. D., V. C. A.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330		
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8														10.2												
9													11.2													
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21										8.2																
22																										
23																										
24																										
25																										
26																										
27																										
28																										
29																										
30																										
31																										
Median																										
Count										1			1	1												

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 702519

TABLE 77

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1945

IONOSPHERIC DATA

h'F1 (Characteristic), km (Unit), May (Month), 1947

Observed at Washington, D.C.

Lat. 39.0°N, Long 77.5°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: A.H.S.

Calculated by: B.W.D., V.C.A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	Q	N	(250)	C	N	C	(320)	C	C	C	(340)	Q					
2							Q	Q	C	(250)	[240]C	(240)	C	N	C	C	C	C	C					
3							Q	Q	Q	N	C	C	C	C	S	C	C	C	Q					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	Q	Q					
6							Q	Q	(230)	C	N	C	C	C	C	E	C	C	Q					
7							Q	Q	C	C	C	C	(230)	(230)	[230]C	240	(270)	A	Q					
8							Q	Q	A	A	N	C	C	C	C	C	C	C	A					
9							C	C	C	(250)	N	C	(250)	C	N	C	(240)	C	Q					
10							Q	270	Q	N	N	(240)	(260)	C	N	C	(280)	Q	Q					
11							Q K	(250)K	[260]K	(260)K	N K	N K	C K	(230)K	(260)K	A K	C K	A K	A K					
12							Q K	N K	C K	C K	(250)K	[270]C K	(280)K	[230]C K	(280)K	C K	C K	C K	C K					
13							A K	A K	A K	A K	N K	A K	C K	230K	(240)K	C K	C K	C K	Q K					
14							N K	C K	250K	C K	C K	C K	(280)K	(260)K	C K	C K	C K	C K	C K					
15							N K	270K	[240]K	(220)K	C K	C K	E K	(240)K	[230]K	(240)K	(270)K	C K	Q K					
16							C K	C K	C K	C K	C K	C K	C K	A K	A K	C K	N K	C K	C K					
17							(320)K	C K	C K	C K	C K	C K	C K	C K	C K	C K	C K	C K	C K					
18							Q	C	N	(280)	[250]C	(230)	(220)	N	C	C	C	C	Q					
19							C	C	C	C	C	C	C	C	C	C	C	C	C					
20							Q	Q	Q	C	C	C	C	C	C	C	Q	C	N					
21							Q	Q	Q	B	B	B	C	C	B	B	B	B	Q					
22							Q	Q	Q	Q	Q	C	C	C	B	B	(300)	340	C					
23							Q	C	C	C	C	C	C	C	C	Q	A	A	Q					
24							C K	C K	C K	A K	B K	B K	B K	B K	B K	C K	C K	C K	C K					
25							Q K	(280)K	C K	C K	C K	N K	B K	B K	B K	B K	C K	C K	Q K					
26							C K	B K	B K	B K	B K	B K	B K	B K	B K	C K	B K	C K	C K					
27							A K	C K	C K	C K	C K	C K	C K	C K	C K	(260)K	C K	A K	C K					
28							Q	A	A	A	A	A	C	C	C	C	C	C	C					
29							C	C	C	N	C	C	C	C	C	C	C	C	C					
30							Q K	Q K	N K	B K	B K	N K	C K	C K	C K	N K	C K	N K	Q K					
31							Q	N	C	(280)	(260)	C	C	C	C	C	C	C	C					
Median										(250)			(255)	(340)	(240)		(270)							
Count							1	4	4	7	4	4	6	7	5	3	5	2						

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U.S. GOVERNMENT PRINTING OFFICE: 1946 O - 760818

TABLE 78

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°FI (Characteristic), Mc (Unit), May (Month), 1947

Observed at Washington, D.C.

Lat. 39.0°N, Long. 77.5°W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: A.H.S.

Calculated by: B.W.D., V.C.A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	Q	N	C	C	N	C	(6.7)	C	C	C	N	Q					
2							Q	Q	L	6.4	(6.6)	(7.6)	C	C	(6.6)	(6.4)	(6.3)	L	L					
3							Q	Q	Q	N	C	C	(6.7)	[6.6]c	[6.4]s	6.3	(6.1)	6.0	Q					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	L	C	C	6.5	[6.2]c	6.0	C	Q	Q					
6							Q	Q	C	C	C	C	(7.0)	N	N	L	(6.5)	L	Q					
7							Q	Q	L	6.2	C	N	(6.2)	N	C	C	5.9	5.1	Q					
8							Q	Q	(5.9)	(6.3)	[6.2]N	(6.0)	(6.1)	[6.2]c	[6.1]c	6.0	6.0	(6.1)	A					
9							C	C	C	5.9	N	N	C	L	N	6.9	5.7	N	Q					
10							Q	L	Q	L	L	6.1	6.2	6.2	6.3	6.1	N	Q	Q					
11							Q^K	N^K	N^K	(5.0)^K	5.3^K	[5.5]^K	5.5^K	[5.6]c	[5.6]c	5.6^K	(5.3)^K	(5.2)^K	A^K					
12							Q^K	N^K	5.1^K	5.2^K	5.4^K	[5.4]^K	(5.4)^K	(5.4)^K	(5.2)^K	5.2^K	5.1^K	(5.0)^K	N^K					
13							A^K	(5.2)^K	[5.2]^K	5.3^K	5.3^K	5.4^K	5.5^K	5.4^K	(5.3)^K	(5.2)^K	(5.0)^K	4.9^K	Q^K					
14							N^K	(4.8)^K	4.8^K	4.8^K	5.0^K	(5.1)^K	5.3^K	5.1^K	5.2^K	4.9^K	4.8^K	4.7^K	(4.3)^K					
15							N^K	L^K	A^K	N^K	C^K	N^K	B^K	N^K	N^K	N^K	(5.8)^K	5.0^K	Q^K					
16							(4.8)^K	(4.7)^K	4.7^K	(5.0)^K	5.2^K	5.3^K	(5.4)^K	(5.3)^K	(5.2)^K	(5.1)^K	5.1^K	[4.8]^K	4.4^K					
17							L^K	N^K	5.2^K	[5.3]^K	5.4^K	C^K	C^K	C^K	(5.2)^K	(5.2)^K	(5.2)^K	(4.6)^K	4.5^K					
18							Q	N	N	C	N	N	(5.4)^J	(5.2)^J	N	C	C	L	Q					
19							C	C	C	C	C	C	(5.6)	C	C	C	5.2	(5.0)	(4.6)					
20							Q	Q	Q	C	C	C	C	C	C	C	Q	(5.2)	(4.8)^J					
21							Q	Q	Q	B	B	B	C	C	B	B	B	B	Q					
22							Q	Q	Q	Q	Q	C	C	C	B	B	N	L	L					
23							Q	C	C	C	C	C	C	C	C	Q	A	A	Q					
24							C^K	C^K	C^K	C^K	B^K	B^K	B^K	B^K	B^K	5.4^K	5.5^K	[5.2]^K	5.0^K					
25							Q^K	N^K	N^K	N^K	5.6^K	N^K	B^K	B^K	B^K	B^K	(5.4)^K	N^K	Q^K					
26							C^K	B^K	B^K	B^K	B^K	B^K	B^K	B^K	B^K	C^K	B^K	C^K	N^K					
27							A^K	N^K	C^K	N^K	N^K	N^K	N^K	N^K	N^K	N^K	C^K	(5.1)^K	A^K					
28							Q	N	A	A	A	A	N	N	C	C	C	C	C					
29							C	C	C	N	C	C	C	C	C	C	C	C	C					
30							Q^K	Q^K	N^K	B^K	B^K	(5.6)^K	C^K	C^K	C^K	(5.6)^K	(5.5)^K	N^K	Q^K					
31							Q	N	N	(6.0)	(6.2)	(6.3)	N	C	C	(6.0)	(5.2)	(5.1)	L					
Median									5.2	5.3	5.4	(5.6)	(5.6)	(5.6)	(5.6)	5.6	(5.4)	(5.1)	4.6					
Count							1	3	6	11	10	10	12	11	11	15	18	15	6					

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE 1947 O - 168119

TABLE 79

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h' E (Characteristic), km (Unit), May (Month), 1947

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: A.H.S.

Lat. 39.9°N, Long. 77.5°W — 75°W Mean Time

Calculated by: B.W.D., V.C.A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	B	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	C	(140)	(150)	(150)					
11							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
12							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
13							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
14							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
15							C*	C*	C*	C*	C*	C*	B*	C*	C*	C*	C*	C*	C*					
16							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
17							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
18							C	C	C	C	C	C	C	C	C	C	C	C	C					
19							C	C	C	C	C	C	C	C	C	C	C	C	C					
20							C	C	C	C	C	C	C	C	C	C	C	C	C					
21							C	C	C	B	B	C	C	C	B	B	B	B	C					
22							C	C	C	C	C	C	C	C	B	B	C	C	C					
23							C	C	C	C	C	C	C	C	C	C	C	C	C					
24							C*	C*	C*	C*	B*	B*	B*	B*	B*	C*	C*	C*	C*					
25							C*	C*	C*	C*	C*	C*	B*	B*	B*	B*	C*	C*	C*					
26							C*	B*	B*	B*	B*	B*	B*	B*	B*	C*	B*	C*	C*					
27							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
28							C	C	C	C	C	C	C	C	C	C	C	C	C					
29							C	C	C	C	C	C	C	C	C	C	C	C	C					
30							C*	C*	C*	B*	B*	C*	C*	C*	C*	C*	C*	C*	C*					
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
Median																								
Count																								

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 738619

TABLE 80

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°E (Characteristic), Mc (Unit), May (Month), 1947

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: A.H.S.

Calculated by: B.W.D., V.C.A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	B	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	(3.7)	(3.5)	3.3	(3.1)					
11							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
12							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
13							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
14							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
15							C*	C*	C*	C*	C*	B*	C*	C*	C*	C*	C*	C*	C*					
16							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
17							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
18							C	C	C	C	C	C	C	C	C	C	C	C	C					
19							C	C	C	C	C	C	C	C	C	C	C	C	C					
20							C	C	C	C	C	C	C	C	C	C	C	C	C					
21							C	C	C	B	B	C	C	C	B	B	B	B	C					
22							C	C	C	C	C	C	C	C	B	B	C	C	C					
23							C	C	C	C	C	C	C	C	C	C	C	C	C					
24							C*	C*	C*	C*	B*	B*	B*	B*	B*	C*	C*	C*	C*					
25							C*	C*	C*	C*	C*	C*	B*	B*	B*	B*	C*	C*	C*					
26							C*	B*	B*	B*	B*	B*	B*	B*	B*	C*	B*	C*	C*					
27							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
28							C	C	C	C	C	C	C	C	C	C	C	C	C					
29							C	C	C	C	C	C	C	C	C	C	C	C	C					
30							C*	C*	C*	B*	B*	C*	C*	C*	C*	C*	C*	C*	C*					
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
Median																								
Count																1	1	1	1					

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 782318

TABLE 81

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1948

IONOSPHERIC DATA

Es (Characteristic), Mc,km (Unit), May (Month), 1947

Observed at Washington, D. C.

Lat. 39.0°N, Long. 77.5°W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: A. H. S.

Calculated by: B. W. D., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	5.0/120	C	(4.7)/120	C	C	B	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	4.5/100	5.1/130	C					
8							C	C	5.0/130	6.0/130	6.3/130	C	C	C	C	C	C	C	6.6/130					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C									
11							C	C	C	C	C	C	C	C	C	4.5/120	C	8.0/110	6.3/110					
12							C	C	C	C	C	C	C	C	C	C	C	C	C					
13							5.0/130	4.8/130	5.6/130	(5.6)/130	C	(4.4)/130	C	C	C	C	C	C	C					
14							C	C	C	C	C	C	C	C	C	C	C	5.0/130	C					
15							C	C	C	C	C	C	B	C	C	C	C	C	C					
16							C	C	C	C	C	C	C	8.0/130	5.0/130	4.9/130	C	C	C					
17							C	C	C	C	C	C	C	C	C	C	C	C	C					
18							C	C	C	C	C	C	C	C	C	C	C	C	C					
19							C	C	C	C	C	C	C	C	C	C	C	C	C					
20							C	C	C	C	C	C	C	C	C	C	C	C	C					
21							C	C	C	B	B	C	C	C	B	B	B	B	C					
22							C	C	4.4/130	4.9/130	C	C	C	C	B	B	C	C	C					
23							C	(4.6)/(130)	C	C	C	C	C	C	C	C	(8.0)/(130)	(6.5)/(130)	C					
24							C	C	C	(4.5)/130	B	B	B	B	B	C	C	C	C					
25							C	C	C	C	C	C	B	B	B	B	C	6.6/110	7.8/130					
26							C	B	B	(4.5)/130	B	B	B	B	B	6.7/110	B	B	C					
27							4.6/130	C	C	C	C	C	C	C	(5.2)/130	C	(5.1)/130	6.1/130	11.0/130					
28							7.4/130	5.7/130	6.9/130	8.2/120	12.5/110	8.2/120	C	C	(6.6)/120	C	C	C	C					
29							C	C	C	C	C	C	C	C	C	C	C	C	C					
30							C	C	C	B	B	C	C	C	C	C	C	C	C					
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
Median										(5.2)								(6.1)	(6.6)					
Count							3	3	4	6	3	2	1	1	3	4	4	7	5					

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 723819

TABLE 82

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

F2-M1500 (Characteristic), ____ (Unit), May (Month), 1947

Observed at Washington, D.C.

Lat 39.0°N, Long 77.5°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: A.H.S.

Calculated by: B.W.D., V.C.A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							1.6	1.6	1.6	(1.5)	1.6	1.5	1.7	1.6	1.6	1.6	(1.6)	1.6	1.6					
2							1.9	1.8	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.6					
3							1.8	C	(1.7)^{H}	1.8	(1.6)	(1.6)^{J}	(1.6)	C	1.5	1.5	1.5	1.6	1.5					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	1.9	1.8	1.8	(1.7)	(1.7)	1.7	1.7	1.8	1.8					
6							(1.9)	2.0	(2.1)	1.9	(1.7)^{J}	C	(1.6)	(1.5)	1.7	B	1.8	(1.8)	(1.8)					
7							(1.9)	1.8	1.9	C	(1.7)^{J}	(1.7)^{J}	(1.6)	(1.6)^{J}	(1.6)	1.7	1.6	1.7	1.7					
8							1.9	1.9	1.9	1.8	(1.7)	1.7	(1.8)	C	1.6	(1.7)^{J}	1.7	1.7	1.7					
9							C	C	C	1.8	(1.7)	(1.7)	C	(1.6)	1.6	1.6	(1.7)	N	(1.8)^{J}					
10							(1.9)	(1.9)	1.8	(1.8)	(1.7)	1.7	(1.6)	1.6	1.5	(1.5)	1.5	1.6	1.6					
11							(1.8)^{K}	N^{K}	N^{K}	(1.7)$^{J}_{K}$	1.6^{K}	N^{K}	G^{K}	(1.7)^{K}	(1.6)^{K}	1.6^{K}	S^{K}	1.8^{K}	1.7^{K}					
12							1.9^{K}	N^{K}	1.6^{K}	(1.6)^{K}	G^{K}	N^{K}	(1.5)^{K}	1.4^{K}	(1.5)^{K}	(1.5)^{K}	1.5^{K}	1.6^{K}	(1.7)^{K}					
13							A^{K}	1.8^{K}	(1.6)^{K}	(1.5)^{K}	1.5^{K}	(1.6)$^{F}_{K}$	(1.7)$^{F}_{K}$	1.6^{K}	1.6^{K}	(1.5)^{K}	(1.7)^{K}	(1.6)^{K}	1.7^{K}					
14							(1.5)^{K}	(1.5)^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	1.6^{K}	(1.7)^{K}	1.7^{K}					
15							N^{K}	NF^{K}	C^{K}	1.9^{K}	N^{K}	N^{K}	B^{K}	N^{K}	(1.7)^{K}	(1.7)^{K}	1.6^{K}	1.7^{K}	1.7^{K}					
16							(1.5)^{K}	(1.5)^{K}	G^{K}	G^{K}	G^{K}	NG^{K}	G^{K}	(1.5)^{K}	N^{K}	(1.5)^{K}	1.5^{K}	1.5^{K}	1.6^{K}					
17							(1.7)^{K}	1.8^{K}	(1.5)^{K}	N^{K}	(1.3)$^{F}_{K}$	C^{K}	C^{K}	C^{K}	G^{K}	G^{K}	NG^{K}	(1.8)^{K}	1.8^{K}					
18							(1.7)	(1.7)^{F}	(1.7)^{J}	1.5	(1.7)	1.5	1.6	1.6	N	C	(1.7)	1.7	1.8					
19							C	C	C	C	C	C	N	C	C	(1.5)	1.5	1.5	1.6					
20							1.7	1.5	1.7	C	C	C	C	C	C	(1.6)	(1.6)	1.5	1.5					
21							(1.7)	1.5	1.5	B	B	1.5	1.5	1.4	B	(1.5)	N	1.4	1.4					
22							1.6	1.6	1.6	1.5	1.4	1.4	1.4	C	B	B	(1.5)	1.5	(1.6)					
23							1.6	(1.4)	1.5	C	C	C	C	C	C	C	A	1.1	1.6					
24							C^{K}	C^{K}	F^{K}	C^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	(1.7)^{K}	N^{K}	(1.6)^{K}	(1.7)^{K}					
25							1.4^{K}	N^{K}	N^{K}	N^{K}	N^{K}	N^{K}	B^{K}	B^{K}	B^{K}	B^{K}	1.5^{K}	N^{K}	(1.6)^{K}					
26							(1.8)$^{J}_{K}$	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	C^{K}	B^{K}	N^{K}	(1.5)^{K}					
27							C^{K}	(1.6)^{K}	C^{K}	C^{K}	C^{K}	N^{K}	N^{K}	C^{K}	N^{K}	N^{K}	C^{K}	(1.4)^{K}	A^{K}					
28							(1.7)^{J}	1.6	(1.6)^{J}	(1.5)	N	1.5	(1.4)	(1.4)	(1.4)	C	C	C	C					
29							C	C	C	C	C	C	C	C	C	C	C	C	C					
30							(1.8)^{K}	(1.7)$^{J}_{K}$	N^{K}	B^{K}	B^{K}	G^{K}	C^{K}	C^{K}	C^{K}	N^{K}	C^{K}	C^{K}	(1.7)^{K}					
31							(1.8)	N	N	(1.6)	(1.6)	1.6	C	C	C	(1.5)^{J}	C	1.6	(1.6)					
Median							(1.8)	1.6	1.6	(1.6)	(1.6)	1.6	(1.6)	1.6	1.6	(1.6)	1.6	1.6	1.7					
Count							22	18	18	17	18	17	17	18	16	20	20	23	27					

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 722518

TABLE 83

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

F2 - M3000 (Characteristic) , (Unit) May (Month) , 1947

Observed at Washington, D.C.

Lat. 39.0°N , Long. 77.5°W 75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: A.H.S. ,

Calculated by: B.W.D. , V.C.A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							2.4	2.5	2.3	(2.4)	(2.4)	2.3	2.5	2.5	2.5	2.4	(2.4)	2.4	2.5					
2							2.8	2.8	2.6	2.6	2.5	2.5	2.4	(2.4)	2.4	2.4	2.5	2.6	2.5					
3							2.7	C	(2.6)^{H}	2.7	(2.5)	(2.4)^{J}	(2.5)	C	2.3	2.3	2.2	2.4	2.3					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	(2.7)	2.7	2.7	(2.6)	(2.6)	2.6	2.6	2.7	(2.7)					
6							(2.9)	2.9	(3.0)	2.8	(2.6)^{J}	C	(2.5)	(2.2)	2.6	B	(2.7)	2.7	2.8					
7							(2.8)	2.7	(2.7)	C	(2.6)^{J}	(2.6)^{J}	(2.5)	(2.5)^{J}	(2.5)	2.6	2.5	2.6	2.6					
8							2.8	2.8	2.8	2.7	(2.6)	2.6	(2.7)	C	2.5	(2.6)^{J}	(2.6)	2.6	2.7					
9							C	C	C	2.7	2.5	(2.6)	C	(2.5)	2.5	2.5	(2.6)	N	(2.7)^{J}					
10							(2.8)	(2.8)	2.7	(2.6)	(2.5)	2.5	(2.4)	2.4	2.3	(2.4)	2.4	2.4	2.5					
11							2.8^{K}	N^{K}	N^{K}	(2.6)$^{F}_{K}$	2.4^{K}	N^{K}	G^{K}	(2.6)^{K}	(2.4)^{K}	2.5^{K}	S^{K}	2.7^{K}	2.6^{K}					
12							2.8^{K}	N^{K}	(2.3)^{K}	(2.4)^{K}	G^{K}	N^{K}	(2.2)^{K}	(2.1)^{K}	(2.3)^{K}	(2.2)^{K}	2.3^{K}	2.4^{K}	2.5^{K}					
13							A^{K}	2.7^{K}	2.5^{K}	(2.3)^{K}	2.4^{K}	(2.4)$^{F}_{K}$	(2.5)$^{F}_{K}$	2.5^{K}	2.4^{K}	(2.3)^{K}	(2.6)^{K}	(2.5)^{K}	2.6^{K}					
14							(2.2)^{K}	(2.3)^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	2.4^{K}	(2.6)^{K}	2.6^{K}					
15							N^{K}	NF^{K}	C^{K}	2.8^{K}	N	N^{K}	B^{K}	N^{K}	(2.6)^{K}	2.7^{K}	2.5^{K}	(2.6)^{K}	2.6^{K}					
16							(2.3)^{K}	(2.2)^{K}	G^{K}	G^{K}	G^{K}	NG^{K}	G^{K}	(2.2)^{K}	N^{K}	(2.3)^{K}	2.3^{K}	2.4^{K}	2.5^{K}					
17							(2.6)^{K}	2.7^{K}	(2.3)^{K}	N^{K}	(2.0)$^{F}_{K}$	C^{K}	C^{K}	C^{K}	G^{K}	G^{K}	NG^{K}	(2.7)^{K}	2.7^{K}					
18							(2.6)	(2.6)^{F}	(2.6)^{J}	(2.4)	(2.6)	(2.4)	2.5	2.5	N	C	(2.6)	2.6	2.7					
19							C	C	C	C	C	C	N	C	C	(2.2)	2.3	2.2	2.4					
20							2.6	2.3	2.5	C	C	C	C	C	C	(2.5)	(2.4)	2.2	2.3					
21							(2.5)	2.2	(2.3)	B	B	2.3	2.3	2.2	B	2.3	N	2.2	2.2					
22							2.4	2.4	2.4	2.4	2.4	2.2	2.1	C	B	B	(2.4)	2.3	2.4					
23							2.4	(2.2)	2.4	C	C	C	C	C	C	C	A	N	2.4					
24							C^{K}	C^{K}	F^{K}	C^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	(2.5)^{K}	N^{K}	2.5^{K}	(2.6)^{K}					
25							2.3^{K}	N^{K}	N^{K}	N^{K}	N^{K}	N^{K}	B^{K}	B^{K}	B^{K}	B^{K}	2.3^{K}	N^{K}	(2.5)^{K}					
26							(2.6)$^{F}_{K}$	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	C^{K}	B^{K}	N^{K}	(2.2)^{K}					
27							C^{K}	(2.5)^{K}	C^{K}	C^{K}	C^{K}	N^{K}	N^{K}	C^{K}	N^{K}	N^{K}	C^{K}	(2.1)^{K}	A^{K}					
28							(2.6)^{J}	2.5	(2.5)^{J}	(2.2)	N	2.3	(2.2)	2.2	(2.2)	C	C	C	C					
29							C	C	C	C	C	C	C	C	C	C	C	C	C					
30							(2.8)^{K}	(2.6)$^{F}_{K}$	N^{K}	B^{K}	B^{K}	G^{K}	C^{K}	C^{K}	C^{K}	N^{K}	C^{K}	C^{K}	(2.5)^{K}					
31							(2.7)	N	N	(2.4)	(2.4)	2.4	C	C	C	(2.3)^{J}	C	2.4	(2.4)					
Median							(2.6)	2.6	2.5	2.4	(2.4)	2.4	2.4	(2.4)	2.4	2.4	2.4	2.5	2.5					
Count							22	18	18	17	18	17	17	15	16	20	20	20	27					

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 722519

TABLE 84

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

FI-M3000 (Characteristic), ____ (Unit), May (Month), 1947

Observed at Washington, D.C.

Lat 39.0°N, Long 77.5°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: A.H.S.

Calculated by: B.W.D., V.C.A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	Q	N	C	C	N	C	(3.2)	C	C	C	N	Q					
2							Q	Q	L	C	(3.4)	(3.0)	C	C	C	(3.2)	(3.2)	L	L					
3							Q	Q	Q	N	C	C	C	C	S	3.0	(2.8)	C	Q					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	L	C	C	(3.8)	C	3.5	C	Q	Q					
6							Q	Q	C	C	C	C	(3.1)	N	N	B	(3.3)	L	Q					
7							Q	Q	L	C	C	N	(3.4)	N	C	C	3.2	A	Q					
8							Q	Q	L	(3.5)	N	(3.4)	N	C	C	C	L	(3.3)	A					
9							C	C	C	L	N	N	C	L	N	(3.3)	C	N	Q					
10							Q	L	Q	L	L	3.5	3.3	3.1	3.0	L	N	Q	Q					
11							Q^K	N^K	N^K	$(3.6)^K$	$(3.5)^K$	N^K	3.4^K	C^K	C^K	3.6^K	$(3.4)^K$	3.3^K	A^K					
12							Q^K	N^K	3.2^K	N^K	N^K	C^K	$(3.0)^K$	$(3.4)^P_K$	$(3.4)^K$	3.3^K	$(3.2)^K$	C^K	N^K					
13							A^K	$(3.0)^K$	A^K	3.3^K	$(3.4)^K$	A^K	3.4^K	3.6^K	$(3.7)^K$	$(3.4)^K$	$(3.5)^K$	3.3^K	Q^K					
14							N^K	$(3.1)^J_K$	$(3.3)^K$	3.5^K	$(3.8)^K$	C^K	3.5^K	3.6^K	3.4^K	$(3.5)^K$	3.6^K	$(3.2)^K$	C^K					
15							N^K	L^K	A^K	N^K	C^K	N^K	B^K	N^K	N^K	N^K	$(3.2)^K$	3.3^K	Q^K					
16							$(2.6)^K$	3.0^K	3.5^K	$(3.2)^K$	3.3^K	C^K	$(3.4)^K$	$(3.4)^K$	A^K	$(3.5)^K$	N^K	N^K	C^K					
17							L^K	N^K	3.0^K	C^K	$(3.2)^K$	C^K	C^K	C^K	C^K	C^K	C^K	$(3.1)^K$	3.1^K					
18							Q	N	N	C	N	N	$(3.8)^J$	N	N	C	C	L	Q					
19							C	C	C	C	C	C	C	C	C	C	C	C	C					
20							Q	Q	Q	C	C	C	C	C	C	C	Q	C	$(3.1)^J$					
21							Q	Q	Q	B	B	B	C	C	B	B	B	B	Q					
22							Q	Q	Q	Q	Q	C	C	C	B	B	N	L	L					
23							Q	C	C	C	C	C	C	C	C	Q	A	A	Q					
24							C^K	C^K	C^K	C^K	B^K	B^K	B^K	B^K	B^K	3.6^K	3.5^K	C^K	C^K					
25							Q^K	N^K	N^K	N^K	$(3.3)^K$	N^K	B^K	B^K	B^K	B^K	C^K	N^K	Q^K					
26							C^K	B^K	B^K	B^K	B^K	B^K	B^K	B^K	B^K	C^K	B^K	C^K	N^K					
27							A^K	N^K	C^K	N^K	N^K	N^K	N^K	N^K	N^K	N^K	C^K	C^K	A^K					
28							Q	N	A	A	A	A	N	N	C	C	C	C	C					
29							C	C	C	N	C	C	C	C	C	C	C	C	C					
30							Q^K	Q^K	N^K	B^K	B^K	$(3.7)^K$	C^K	C^K	C^K	$(3.6)^K$	C^K	N^K	Q^K					
31							Q	N	N	(3.5)	(3.2)	(3.3)	N	C	C	C	C	(3.1)	L					
Median										(3.5)	(3.4)	(3.4)	(3.4)	3.4		(3.5)	(3.2)	(3.3)						
Count							1	3	4	6	8	5	9	7	4	11	10	7	2					

Sweep 3.1 Mc to 17.0 Mc in ____ min.

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 746318

TABLE 85

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

E-M1500 (Characteristic), _____ (Unit), May (Month), 19 47

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat. 39.0°N, Long. 77.5°W

75° W Mean Time

Scaled by: A.H.S.

Calculated by: B.W.D., V.C.A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	B	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	(4.1)	(4.0)	(3.4)	(4.1)					
11							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
12							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
13							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
14							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
15							C*	C*	C*	C*	C*	C*	B*	C*	C*	C*	C*	C*	C*					
16							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
17							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
18							C	C	C	C	C	C	C	C	C	C	C	C	C					
19							C	C	C	C	C	C	C	C	C	C	C	C	C					
20							C	C	C	C	C	C	C	C	C	C	C	C	C					
21							C	C	C	B	B	C	C	C	B	B	B	B	C					
22							C	C	C	C	C	C	C	C	B	B	C	C	C					
23							C	C	C	C	C	C	C	C	C	C	C	C	C					
24							C*	C*	C*	C*	B*	B*	B*	B*	B*	C*	C*	C*	C*					
25							C*	C*	C*	C*	C*	C*	B*	B*	B*	B*	C*	C*	C*					
26							C*	B*	B*	B*	B*	B*	B*	B*	B*	C*	B*	C*	C*					
27							C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*					
28							C	C	C	C	C	C	C	C	C	C	C	C	C					
29							C	C	C	C	C	C	C	C	C	C	C	C	C					
30							C*	C*	C*	B*	B*	C*	C*	C*	C*	C*	C*	C*	C*					
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
Median																1	1	1	1					
Count																								

Sweep 3.1 Mc to 17.0 Mc in _____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1949 O - 702119

Table 86

Ionospheric Storminess, May 1947

Day	Ionospheric character* 00-12 GCT	12-24 GCT	Principal storms Beginning GCT	End GCT	Geomagnetic character** 00-12 GCT	12-24 GCT
1	***	2			3	2
2	***	2			1	1
3	***	2			1	1
4	***	***			2	1
5	***	1			2	2
6	***	2			1	1
7	***	2			2	1
8	***	2			1	0
9	***	2			1	0
10	***	1			1	1
11	***	5	---/	--//	2	2
12	***	6	---/	--//	3	2
13	***	5	---/	--//	3	3
14	***	7	---/	--//	4	3
15	***	4	---/	--//	4	4
16	***	6	---/	--//	5	4
17	***	6	---/	--//	3	3
18	***	1			3	3
19	***	***			3	1
20	***	***			2	2
21	***	1			2	2
22	***	2			1	2
23	***	***			4	3
24	***	***	---/	--//	5	4
25	***	***	---/	--//	3	2
26	***	***	---/	--//	3	4
27	***	***	---/	--//	3	3
28	***	2			2	4
29	***	***			3	2
30	***	***	---/	--//	1	1
31	***	3			2	3

*Ionospheric character figure (I-figure) for ionospheric storminess at Washington, D.C., during 12-hour period on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, magnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

***No readable record. Refer to table 75 for detailed explanation.

/Time of beginning unknown because of loss of record.

//Time of ending unknown because of loss of record.

Table 87

Sudden Ionosphere Disturbances Observed at Washington, D. C.

1947 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
May					
3	1256	1310	D.C., England, Ontario	0.2	
5	1552	1605	Ohio, D.C., England, New Brunswick, Ontario	0.05	Terr.mag. pulse** 1550-1600
5	2018	2035	Ohio, D.C., England, Mexico, Ontario	0.05	
8	1302	1340	England	0.05	
8	2113	2155	England	0.05	
9	1519	1535	England	0.2	
15	1828	1840	Ohio, D.C., Ontario	0.1	Terr.mag. pulse** 1825-1835
15	2214	2230	Ohio, D.C., England, Mexico, New York, Ontario	0.1	
16	1243	1320	Ohio, D.C., England, Mexico, Ontario	0.0	
16	1453	1600	Ohio, D.C., England, Mexico, Ontario	0.0	
16	1819	1855	Ohio, D.C., Mexico, Ontario	0.2	
17	1114	***	D.C., England, Ontario	0.02	
17	2142	2155	Ohio, D.C., Mexico, Ontario	0.1	
18	1928	***	Ohio, D.C., England, Ontario	0.0	
18	1944	2030	Ohio, D.C., England, Ontario	0.0	
19	1139	1210	Ohio, D.C., England, Ontario	0.03	
19	1337	1400	Ohio, D.C., England, Mexico, Ontario	0.2	
19	1825	1900	Ohio, D.C., England, New Brunswick, Ontario	0.0	
20	1245	1320	England, Ontario	0.2	
20	1603	1650	Ohio, D.C., England, Mexico, New Brunswick, Ontario	0.01	
20	1840	1950	Ohio, D.C., England, Mexico, New Brunswick, Ontario	0.0	
20	2302	2315	Ohio, D.C., Mexico, Ontario	0.2	
21	1400	1410	Ohio, D.C., New Brunswick, Ontario	0.1	
21	1524	1550	Ohio, D.C., England, New Brunswick, Ontario	0.05	
21	1630	1650	Ohio, D.C., England, Ontario	0.1	
21	1821	2100	Ohio, D.C., England, New Brunswick, Ontario	0.0	
May					
22	1758	1820	Ohio, D.C., England, New Brunswick, Ontario	0.0	
22	1848	2030	Ohio, D.C., England, New Brunswick, Ontario	0.0	
22	2232	2245	Ohio, D.C., Mexico, Ontario	0.2	
23	1225	1310	Ohio, D.C., Ontario	0.05	
24	1500	1610	Ohio, D.C., England, New Brunswick, Ontario	0.02	Terr.mag. pulse** 1500-1510
24	1845	1910	Ohio, D.C., England, New Brunswick, Ontario	0.0	
25	1423	1450	Ohio, D.C., England, Ontario	0.02	
25	1827	1905	Ohio, D.C., England, Ontario	0.1	
26	1159	***	Ohio, D.C., England, Ontario	0.0	
26	1320	1520	Ohio, D.C., England, Ontario	0.0	Terr.mag. pulse** 1320-1335
26	1841	1855	Ohio, D.C., New Brunswick, Ontario	0.1	
27	2024	2150	Ohio, D.C., England, New Brunswick, Ontario	0.0	
28	1715	1935	Ohio, D.C., Onterio	0.03	
29	1428	***	Ohio, D.C., England, Mexico, New Brunswick, Ontario	0.0	
30	1414	1430	Ohio, D.C., England, Mexico, New Brunswick, Ontario	0.0	Terr.mag. pulse** 1414-1420

*Ratio of received field intensity during SID to average field intensity before and after, for station W8XAL, 6080 kilocycles, 600 kilometers distant, for all SID except the following: Station GIH, 13525 kilocycles, received in New York, 5340 kilometers distant, was used for the SID on May 3, May 8, May 9, May 17 at 1114, and May 20 at 1245.

**As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.

***Incomplete recovery of SID.

Table 88

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief, Cable and Wireless, Ltd., as Observed in England

1947 Day	GCT Beginning	GCT End	Receiving station	Location of transmitters
April				
15	1457	1605	Brentwood	Austria, Belgian Congo, Brazil, Canary Is., Chile, Colombia, French Equatorial Africa, Greece, India, Iran, Madagascar, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Thailand, Turkey, U.S.S.R., Venezuela, Yugoslavia, Zanzibar
15	1458	1620	Somerton	Argentina, Ascension I., Australia, Barbados, Canada, Ceylon, China, Egypt, Gold Coast, India, Japan, New York, Union of S. Africa
15	1737	2140	Somerton	Argentina, Barbados, New York
24	0850	0920	Brentwood	Bahrein I., Belgian Congo, India, Iran, Kenya, Madagascar, Southern Rhodesia, Syria, Zanzibar
26	0725	0800	Brentwood	Austria, Bahrein I., Belgian Congo, French Equatorial Africa, Greece, India, Iran, Kenya, Palestine, Portugal, Southern Rhodesia, Syria, Turkey, U.S.S.R., Yugoslavia
26	0730	0800	Somerton	Ascension I., Ceylon, India, Union of S. Africa
May				
6	1017	1040	Brentwood	Austria, Belgian Congo, Brazil, Canary Is., Greece, India, Iran, Kenya, Madagascar, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Turkey, U.S.S.R., Yugoslavia, Zanzibar
6	1015	1030	Somerton	Argentina, Ascension I., Australia, Barbados, Canada, Ceylon, China, Egypt, Gold Coast, India, Japan, New York, Union of S. Africa
7	0820	0840	Brentwood	Belgian Congo, Iran, Kenya, Madagascar, Palestine, Southern Rhodesia, Spain, Switzerland
8	1305	1330	Brentwood	Austria, Belgian Congo, Brazil, Canary Is., Iran, Kenya, Portugal, Southern Rhodesia, Spain, Switzerland, Thailand, Zanzibar
16	0830	0845	Brentwood	Kenya, Madagascar, Southern Rhodesia, Spain, Switzerland, Yugoslavia, Zanzibar
May				
16	1247	1315	Brentwood	Austria, Belgian Congo, Bulgaria, Canary Is., Chile, Colombia, Greece, India, Iran, Kenya, Madagascar, Malta, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Thailand, Turkey, U.S.S.R., Yugoslavia, Zanzibar
16	1245	1302	Somerton	Argentina, Ascension I., Australia, Barbados, Brazil, Canada, Ceylon, China, Egypt, Gold Coast, India, New York, Union of S. Africa
16	1455	1515	Brentwood	Belgian Congo, Canary Is., Chile, Colombia, French Equatorial Africa, Greece, India, Iran, Madagascar, Malta, Palestine, Southern Rhodesia, Spain, Switzerland, Syria, Thailand, Turkey, U.S.S.R., Zanzibar
16	1458	1530	Somerton	Argentina, Ascension I., Barbados, Brazil, Egypt, Gold Coast, New York, Union of S. Africa
17	0820	0840	Brentwood	Belgian Congo, Canary Is., Greece, Kenya, Palestine, Spain, Switzerland, Syria, U.S.S.R.
17	1025	1035	Brentwood	Canary Is., India, Kenya, Southern Rhodesia, Switzerland, U.S.S.R., Zanzibar
17	1115	1330	Brentwood	Austria, Belgian Congo, Canary Is., Chile, Colombia, Greece, India, Iran, Kenya, Madagascar, Palestine, Portugal, Southern Rhodesia, Spain, Surinam, Switzerland, Syria, Thailand, Turkey, Uruguay, U.S.S.R., Yugoslavia, Zanzibar

Note.-Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances, for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Table 59

Provisional Radio Propagation Quality Figures
April 1947
Compared with CRPL Warnings and CRPL Probable Disturbed Period Forecasts

Day	North Atlantic: Quality figure 01-12 GCT	Quality figure 13-24 GCT	CRPL* Warning 01-12 GCT	CRPL* Warning 13-24 GCT	CRPL probable disturbed period forecast	Geomagnetic K_{Ch} 01-12 GCT	Geomagnetic K_{Ch} 13-24 GCT	North Pacific: Quality figure 01-12 GCT	Quality figure 13-24 GCT	CRPL* Warning 01-12 GCT	CRPL* Warning 13-24 GCT	CRPL probable disturbed period forecast	Geomagnetic K_{Ch} 01-12 GCT	Geomagnetic K_{Ch} 13-24 GCT
1	6	6				2	2	6	(4)				2	2
2	7	6				2	2	5	-				2	2
3	6	6				2	3	(4)	(4)				2	3
4	5	5	X		X	3	3	7	5	X		X	3	3
5	7	6	X		X	1	2	5	(3)	X		X	1	2
6	6	5			X	4	2	(4)	(4)			X	4	2
7	7	5				1	2	6	(4)				1	2
8	6	5				2	3	7	6				2	3
9	(4)	5		X		5	3	5	5		X		5	3
10	5	5	X		X	3	2	7	5	X		X	3	2
11	6	6			X	3	2	6	5			X	3	2
12	7	6				2	3	5	5				2	3
13	6	6				2	2	6	9				2	2
14	6	6				2	2	7	7				2	2
15	6	(4)				3	3	6	(4)				3	3
16	5	5				3	3	6	7				3	3
17	6	(3)		X		3	7	6	(4)		X		3	7
18	(2)	(3)	X	X		4	4	5	(4)	X	X		4	4
19	(4)	5	X	X	X	4	3	(4)	6	X	X	X	4	3
20	6	6				4	3	6	6				4	3
21	7	6				3	1	7	7				3	1
22	7	6				1	0	7	7				1	0
23	7	6				1	2	7	7				1	2
24	7	7			X	1	0	7	6			X	1	0
25	7	5			X	1	2	6	6			X	1	2
26	7	5			X	2	4	6	6			X	2	4
27	5	6			X	3	3	6	7			X	3	3
28	6	5				2	3	6	9				2	3
29	6	5				3	2	5	9				3	2
30	6	5				3	3	7	7				3	3
Scores:														
H			3		1					3		3		
M			2		4					6		6		
G			22		16					15		14		
(S)			2		6					1		3		
S			1		3					2		4		

Quality Figure Scale:
1 - Useless
2 - Very poor
3 - Poor
4 - Poor to fair
5 - Fair
6 - Fair to good
7 - Good
8 - Very good
9 - Excellent

Symbols
X Warning given or probable disturbed date.
H Quality 4 or worse on day or half day of warning.
M Quality 4 or worse on day or half day of no warning.
G Quality 5 or better on day of no warning.
(S) Quality 5 on day of warning.
S Quality 6 or better on day of warning.
( ) Quality 4 or worse (disturbed).

Geomagnetic K_{Ch} on the standard scale of 0 to 9, 9 representing the greatest disturbance.

*Broadcast on WWV, Washington, D.C. Times of warnings recorded to nearest half day as broadcast.

Table 90

Daily Median Values of American Relative Sunspot Numbers*

May 1947

Date	No.	Date	No.
1	194	16	117
2	170	17	152
3	194	18	174
4	163	19	230
5	151	20	246
6	157	21	259
7	170	22	296
8	158	23	328
9	159	24	312
10	165	25	315
11	166	26	300
12	158	27	283
13	168	28	274
14	123	29	249
15	117	30	202
		31	208
No. of Days	31	Mean	205.1

*Median of data from 16 observers.

Table 91

CORONAL OBSERVATIONS AT CLIMAX, COLORADO

May 1947

First row - green line 5303A
Second row - red line 6374A
Third row - red line 6704A

Degrees from astronomical north

Date	Time of observation GCT	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175
13	2115-2201	-	-	6	8	10	10	10	11	13	18	20	18	13	10	10	9	10	11	11	12	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
											14	13	11	1	1	1	2	5	4	4	5	1															
20	1435-2220	8	7	-	7	7	11	14	13	15	17	16	12	12	12	14	18	24	28	27	26	26	20	11	10	9	9	4	4	-	4	9	9	10	10	9	8
										2	4	2					2	4	9	3	4	5	9	11	2	1	1	1	1								
														1	1	2	3	2	3	4	5	4	2	2													
21	1525-1550	5	4	4	--	8	10	11	10	13	14	14	14	13	13	14	16	19	16	20	15	14	12	10	7	6	5	--	--	--	--	4	4	5	4	--	--
																	1	1	2	4	4	4	3	3	3	2	2	1									
														1	1	2	2	3	2	2	2	2	1	1													
22	1528-1546	-	-	-	--	--	7	8	10	10	11	11	12	12	13	14	18	20	19	24	19	14	13	10	--	--	--	--	--	--	--	--	--	--	--	--	--
															1	4	3	4	3	5	2	3	2	1													
													1	1	2	3	4	4	4	3	3	3	3	2	2	1											
25	1508-1533	-	-	-	--	--	--	--	--	--	7	15	25	21	15	13	11	15	25	20	26	28	28	25	22	20	15	6	--	5	5	5	5	--	--	--	--
									1	1	3	4	4	3	2	1	1	1	1	2	6	4	5	5	3	2	1	1	1	1							
												1	1	1	1	1	1	3	4	5	5	4	4	3	3	3	2	2									

Degrees from astronomical north

Date	Time of observation GCT	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355
13	2115-2201	-	-	-	-	8	11	14	19	23	23	23	24	26	13	10	9	11	16	17	9	--	--	--	8	9	--	--	--	--	--	--	--	--	--	--	--
		1	1	1	1	1		1	2	12	7	8	11	13	13	11	4	8	15	11	1																
20	1435-2220	5	6	6	7	8	9	9	10	9	20	27	25	18	13	12	14	17	22	28	15	13	12	10	8	7	4	4	5	5	--	--	--	--	--	--	--
						1	1	2	2	2	3	3	3	2	1	1	1	1	1																			
											2		4	7	7	7		4	11	11	10	2																
21	1525-1550	-	-	5	5	4	4	4	5	11	15	22	22	18	11	9	10	13	23	20	24	13	11	9	8	9	8	6	7	8	7	--	--	--	--	4	5
											3	3	4	11	10	2	1	3	10	9	5	3															
22	1528-1546	-	-	-	-	-	--	--	--	10	13	12	14	14	17	8	8	9	12	32	28	13	13	11	--	--	--	--	--	--	--	--	--	--	--	--	--
											4	3	4	8	10	8	4	2	11	7	12	2															
																		1	2	3	3	2	1														
25	1508-1533	-	-	-	-	5	6	7	8	15	21	22	21	17	12	10	12	17	26	28	23	20	14	10	7	8	9	9	6	5	5	--	--	--	--	--	--
									1	2	4	1	1	2	4	2	1	4	10	9	11	6	1														

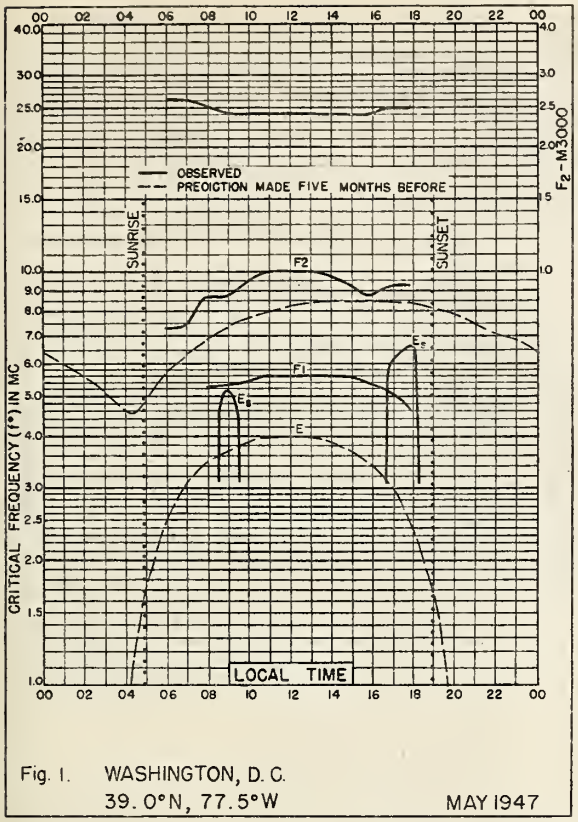

Fig. 1. WASHINGTON, D. C.
39.0°N, 77.5°W
MAY 1947

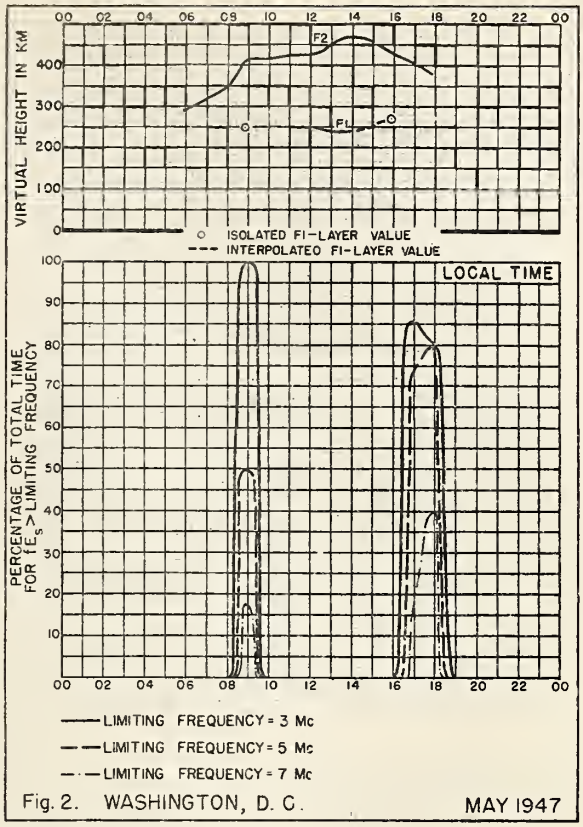

Fig. 2. WASHINGTON, D. C.
MAY 1947

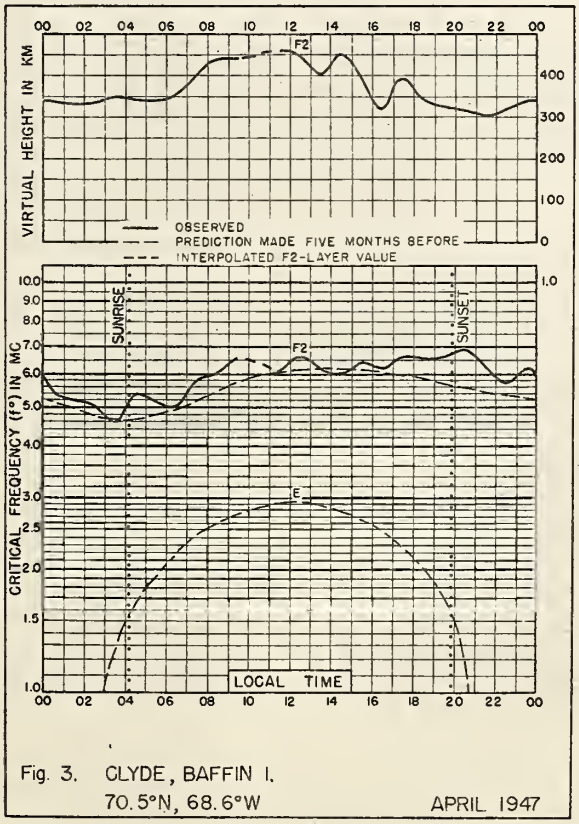

Fig. 3. CLYDE, BAFFIN I.
70.5°N, 68.6°W
APRIL 1947

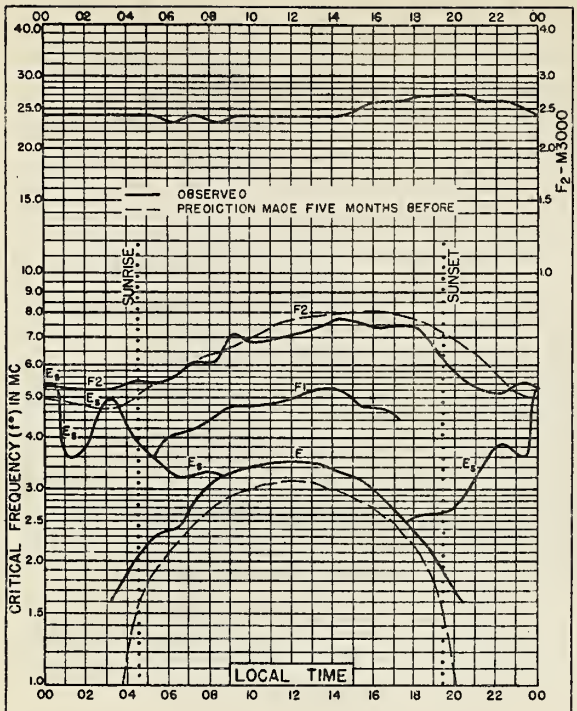

Fig. 4. FAIRBANKS, ALASKA
64.9°N, 147.8°W APRIL 1947

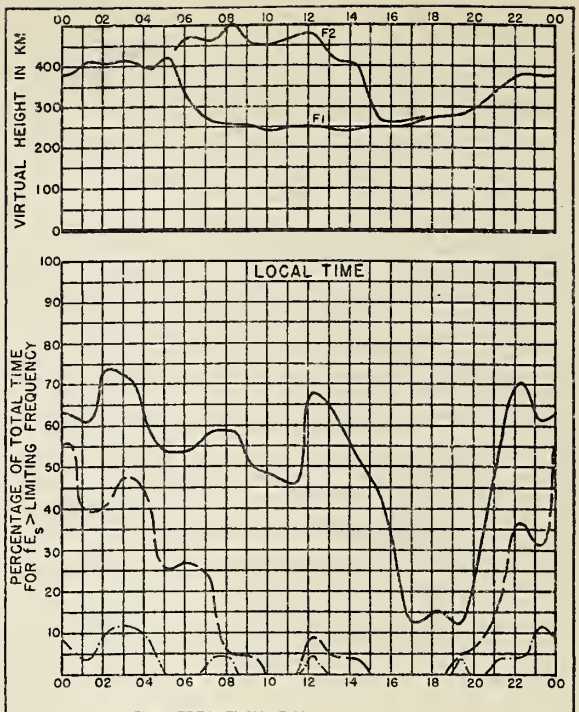

Fig. 5. FAIRBANKS, ALASKA APRIL 1947

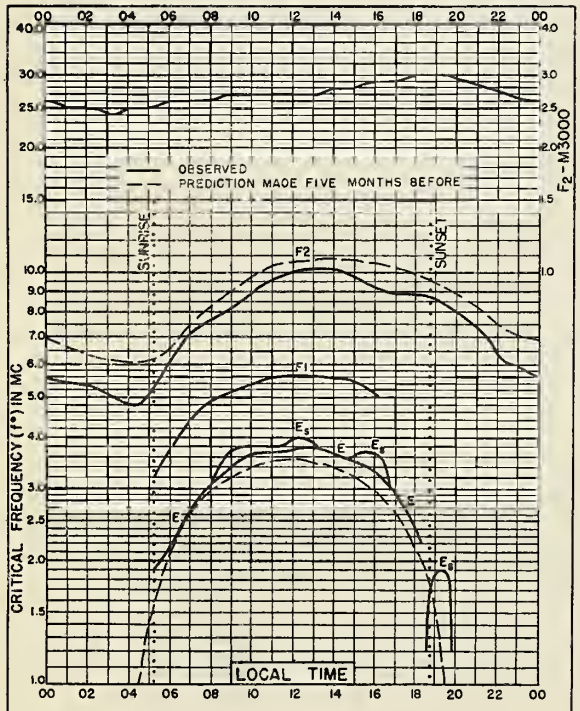

Fig. 6. ADAK, ALASKA
51.9°N, 176.6°W APRIL 1947

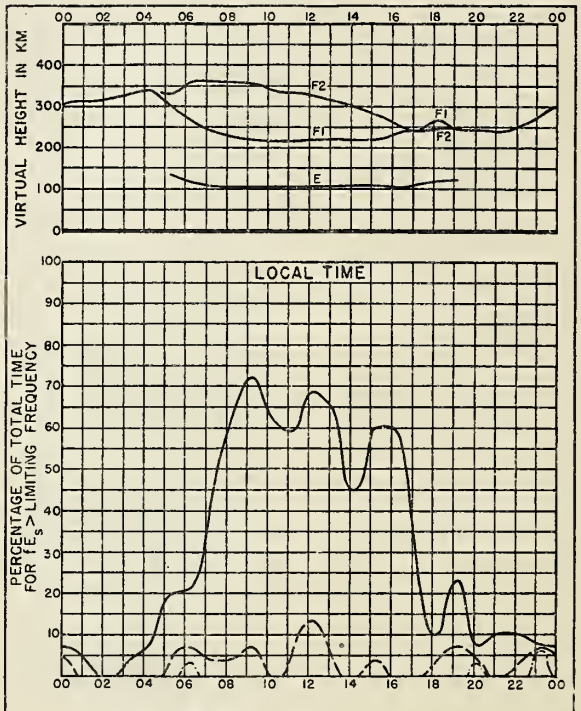

Fig. 7. ADAK, ALASKA APRIL 1947

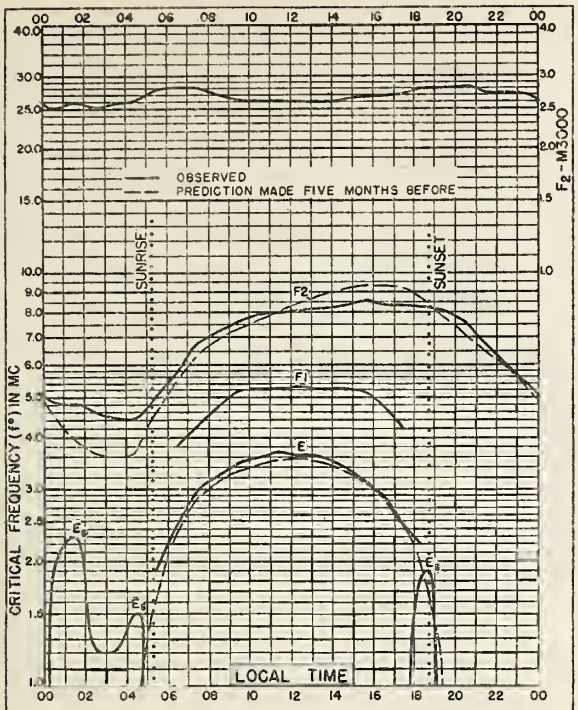

Fig. 8. PORTAGE la PRAIRIE, MANITOBA
49.9°N, 98.3°W APRIL 1947

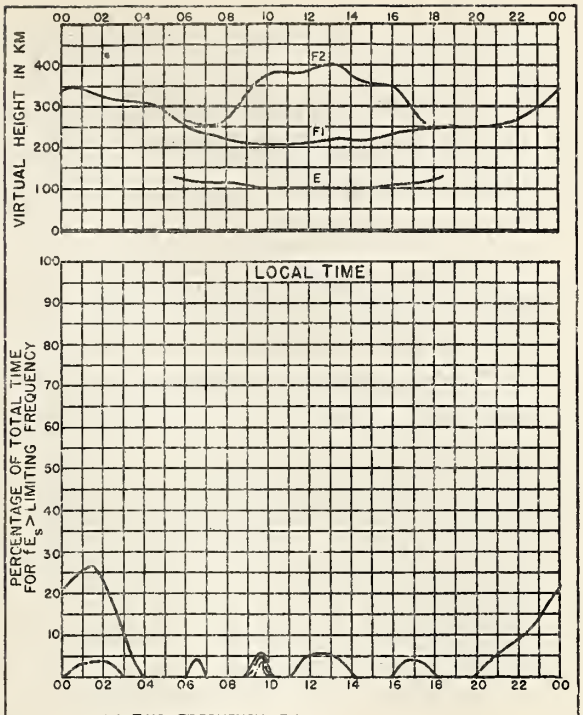

Fig. 9. PORTAGE la PRAIRIE, MANITOBA APRIL 1947

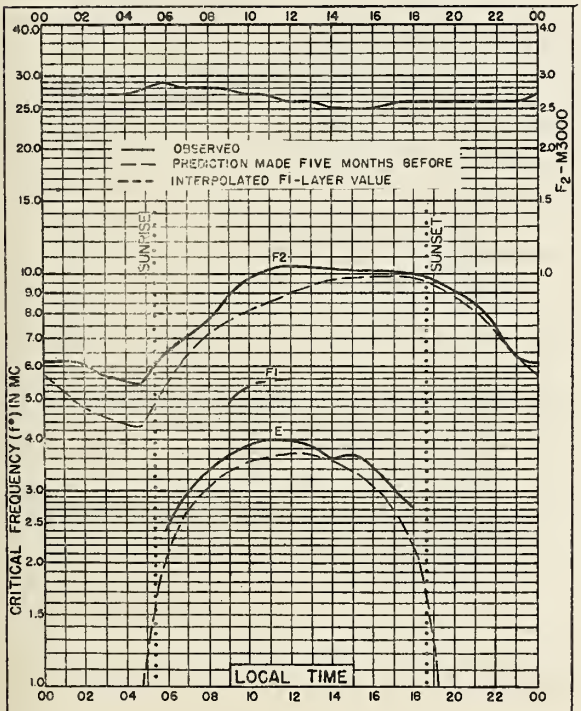

Fig. 10. OTTAWA, CANADA
45.5°N, 75.8°W APRIL 1947

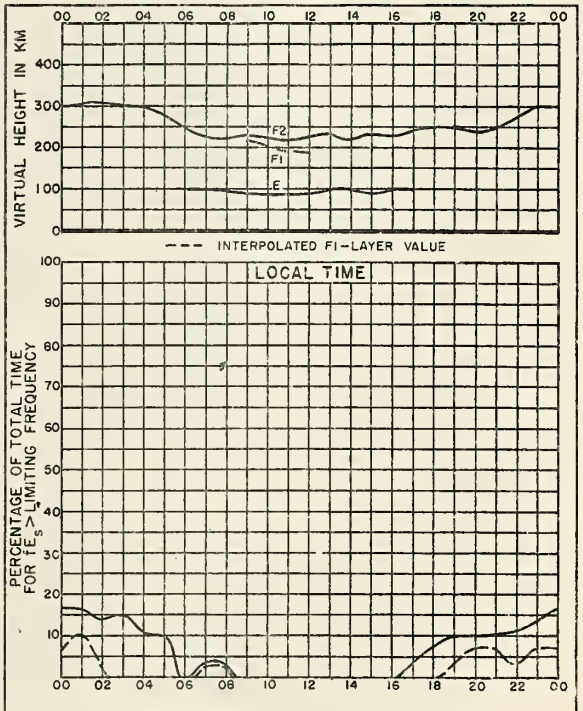

Fig. 11. OTTAWA, CANADA APRIL 1947

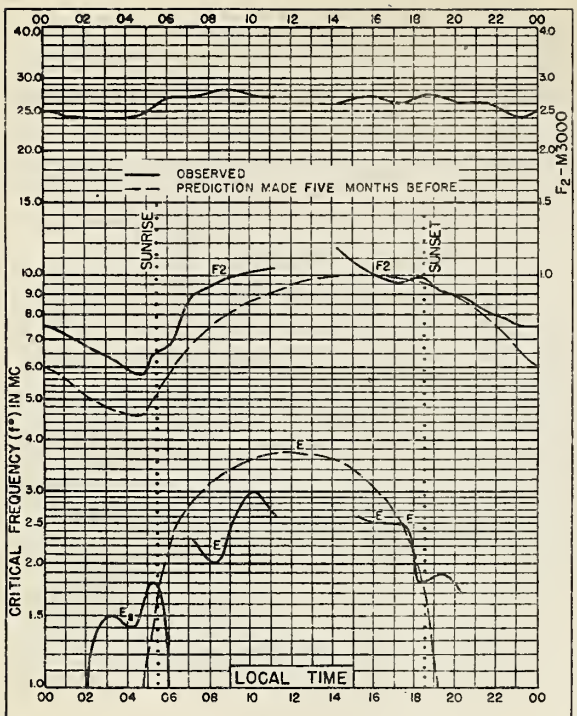

Fig. 12. BOSTON, MASSACHUSETTS
42.4°N, 71.2°W
APRIL 1947

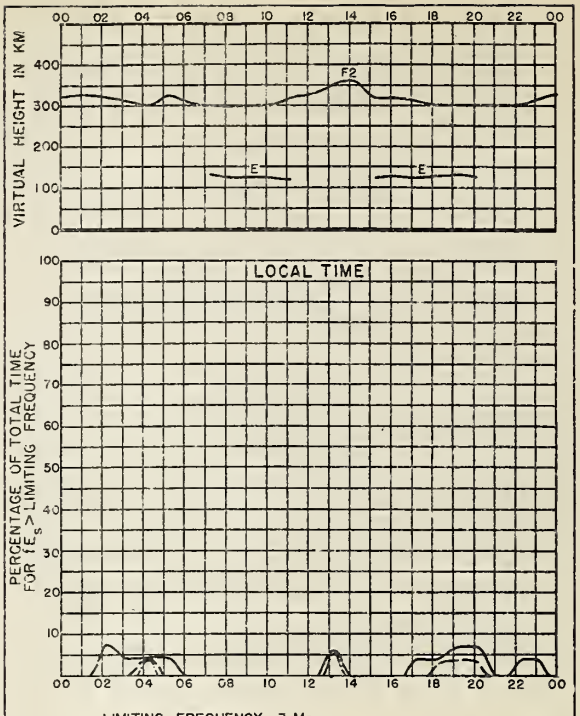

Fig. 13. BOSTON, MASSACHUSETTS
APRIL 1947

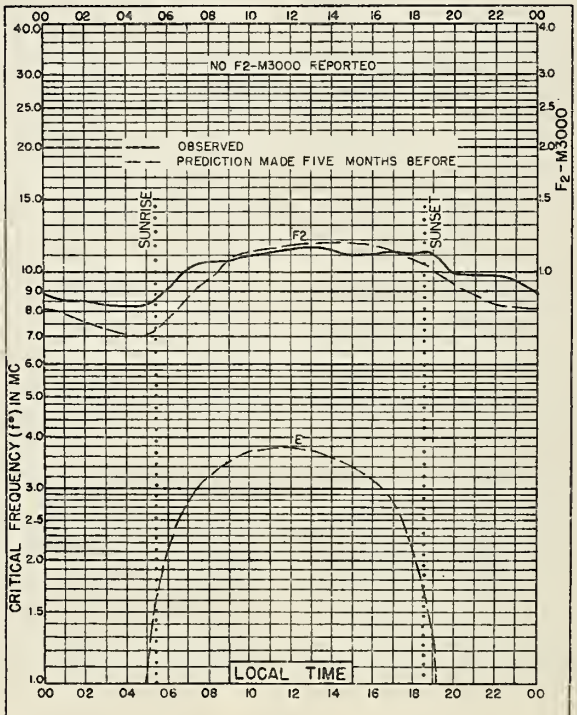

Fig. 14. PEIPING, CHINA
39.9°N, 116.4°E
APRIL 1947

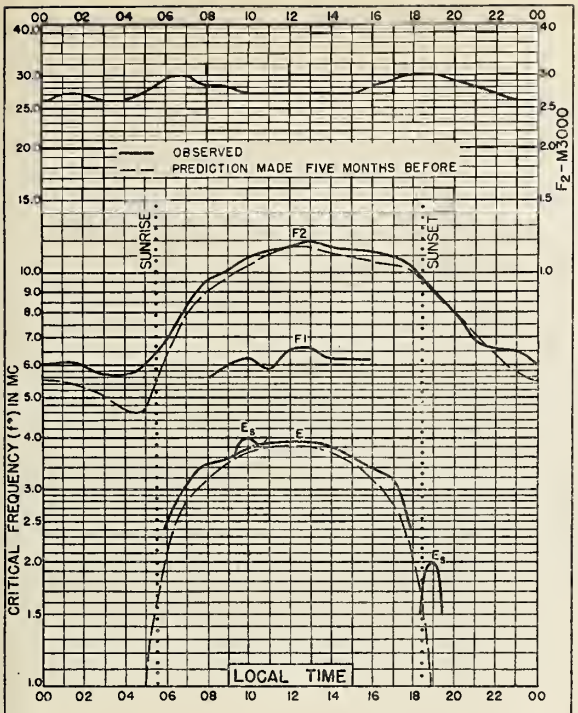

Fig. 15. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W APRIL 1947

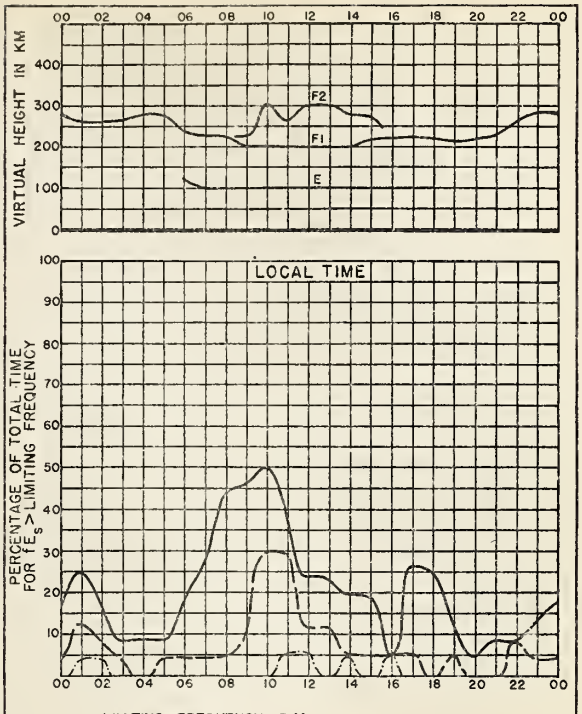

Fig. 16. SAN FRANCISCO, CALIFORNIA APRIL 1947

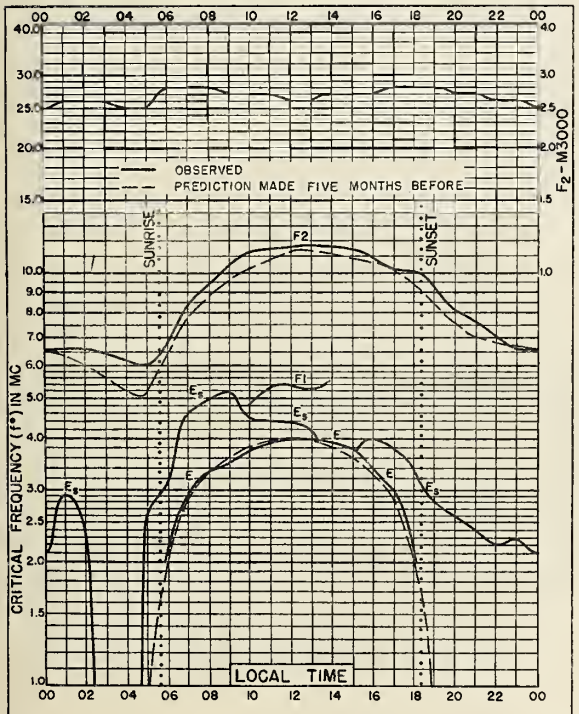

Fig. 17. WHITE SANDS, NEW MEXICO
32.6°N, 106.5°W APRIL 1947

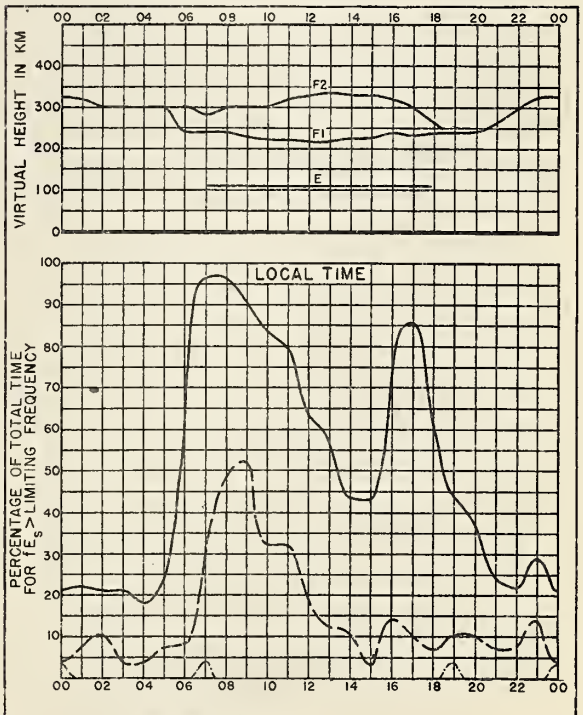

Fig. 18. WHITE SANDS, NEW MEXICO APRIL 1947

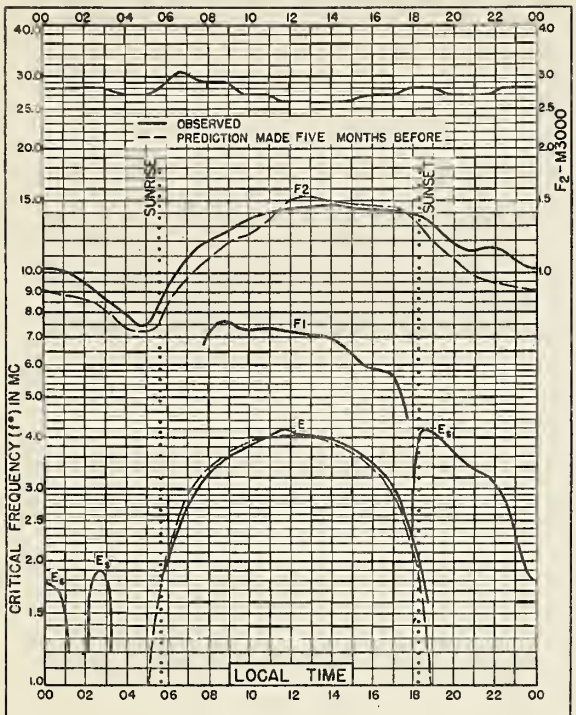

Fig. 19. WUCHANG, CHINA
30.6°N, 114.4°E APRIL 1947

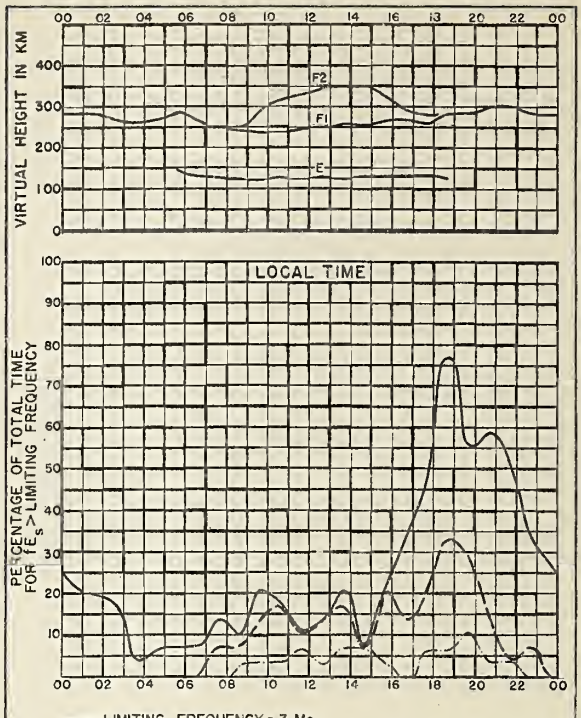

Fig. 20 WUCHANG, CHINA APRIL 1947

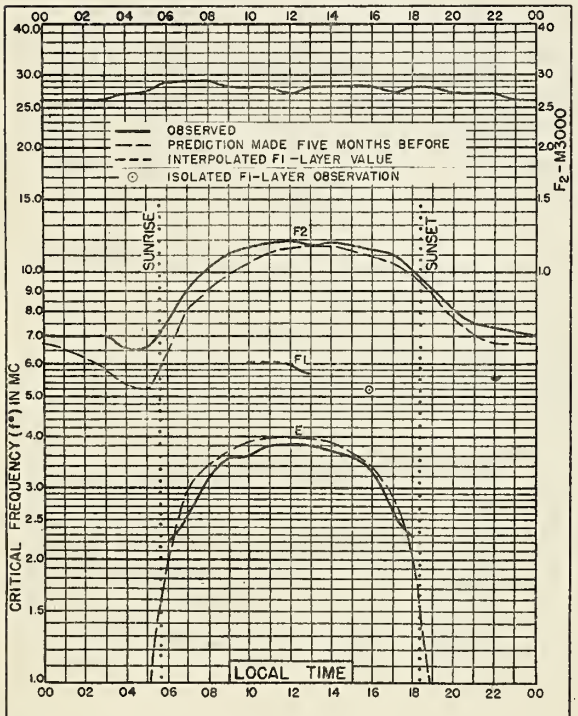

Fig. 21. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W APRIL 1947

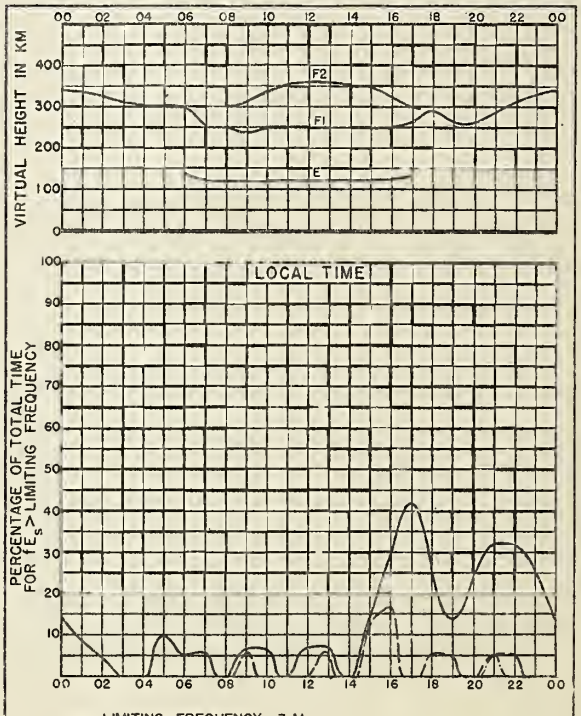

Fig 22. BATON ROUGE, LOUISIANA APRIL 1947

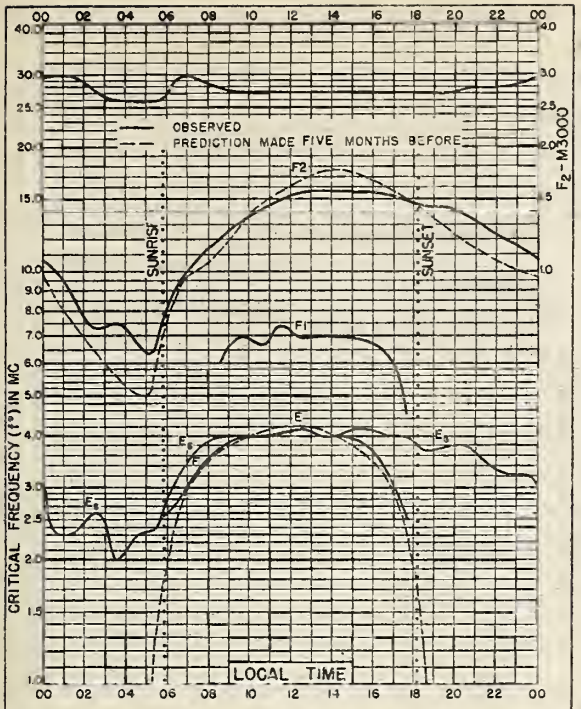

Fig. 23 MAUI, HAWAII
20.8°N, 156.5°W
APRIL 1947

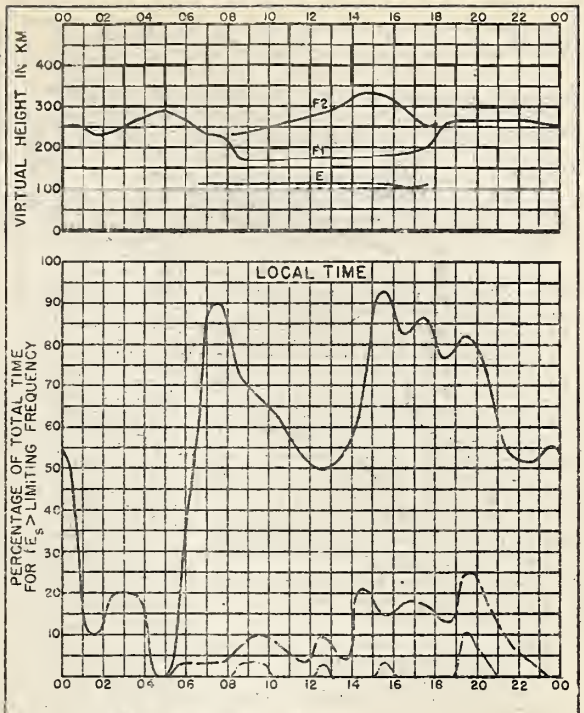

Fig. 24. MAUI, HAWAII
APRIL 1947

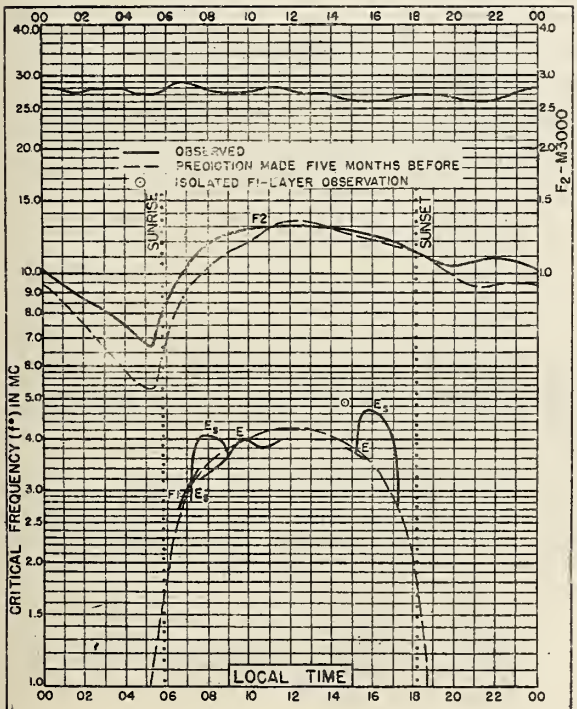

Fig. 25. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W
APRIL 1947

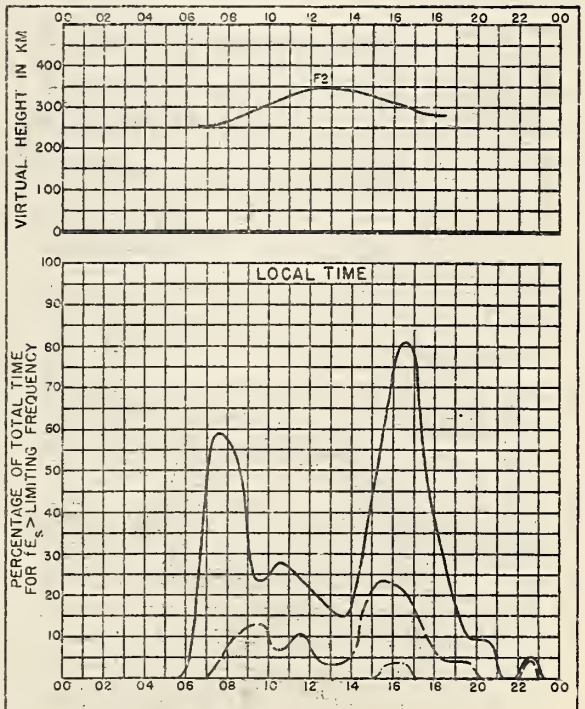

Fig. 26. SAN JUAN, PUERTO RICO
APRIL 1947

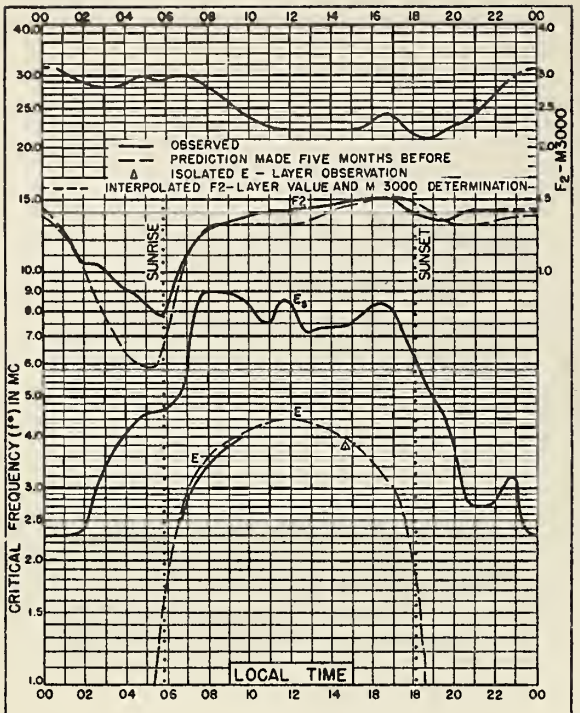

Fig. 27. GUAM I.
13.5°N, 144.8°E
APRIL 1947

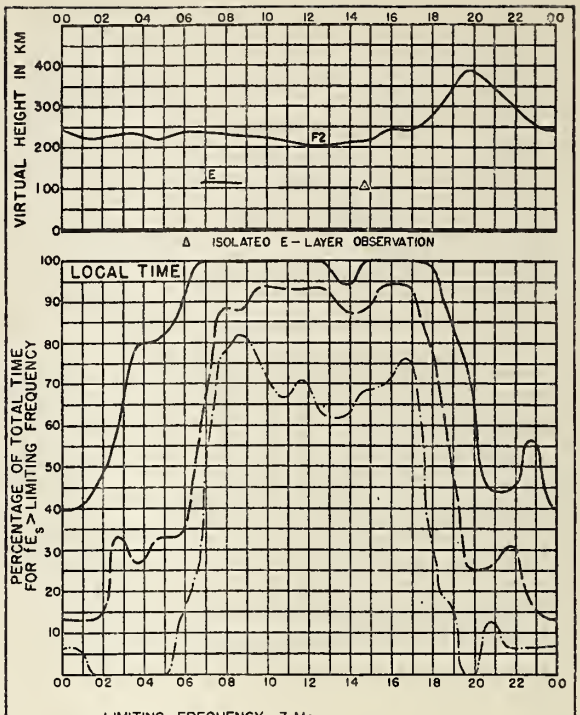

Fig. 28. GUAM I.
APRIL 1947

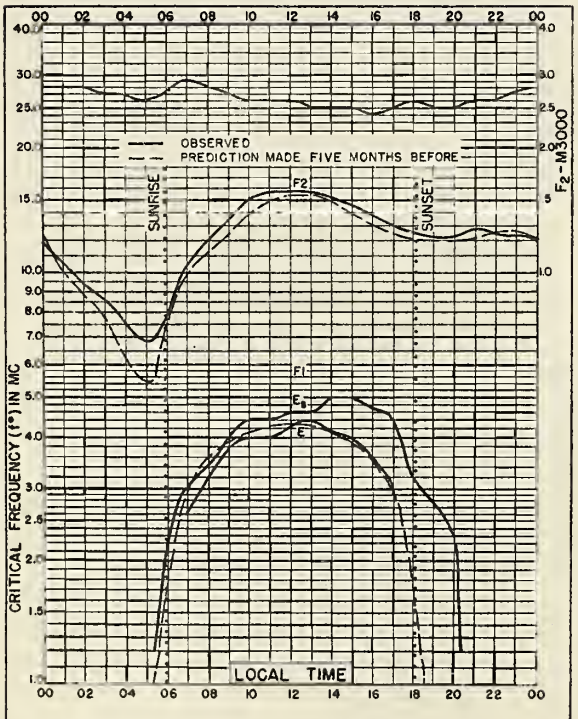

Fig. 29. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.2°W
APRIL 1947

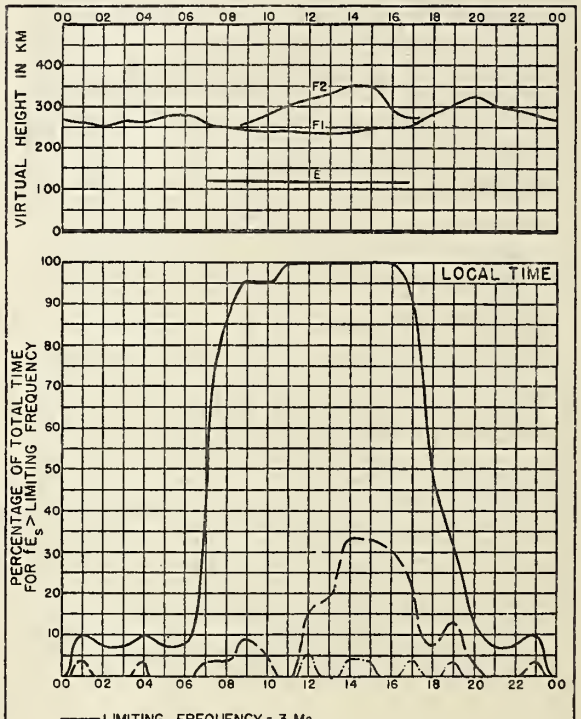

Fig. 30. TRINIDAD, BRIT. WEST INDIES
APRIL 1947

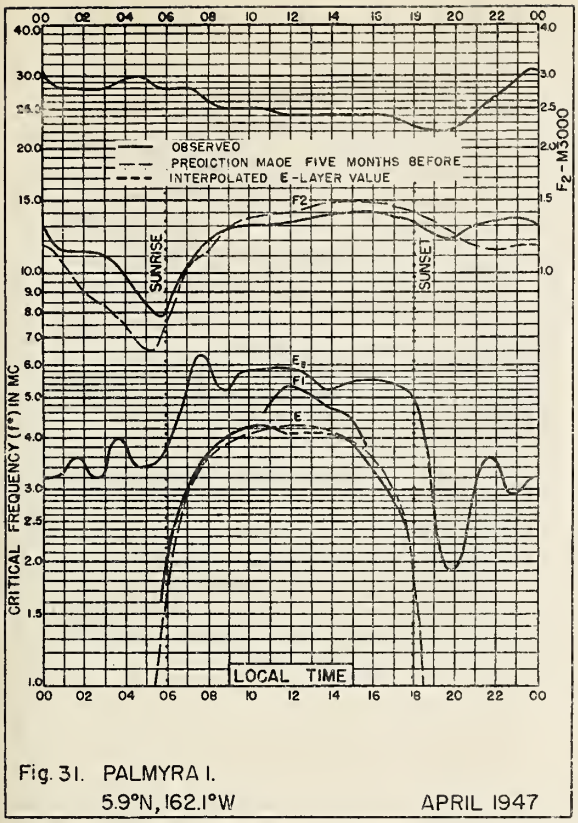

Fig. 31. PALMYRA I.
5.9°N, 162.1°W
APRIL 1947

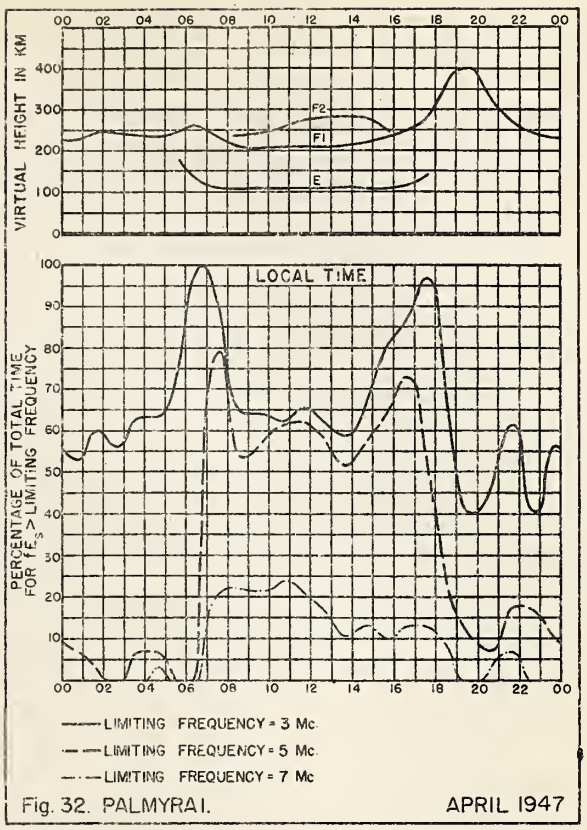

Fig. 32. PALMYRA I.
APRIL 1947

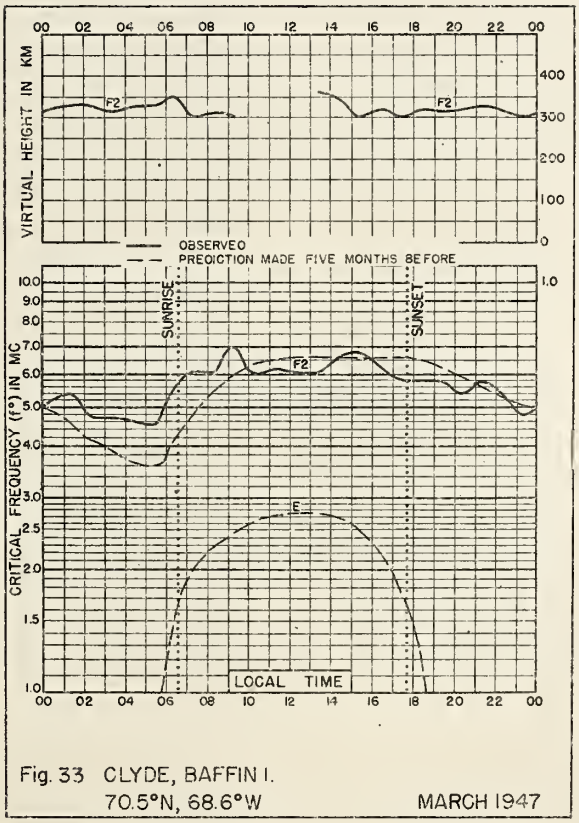

Fig. 33 CLYDE, BAFFIN I.
70.5°N, 68.6°W
MARCH 1947

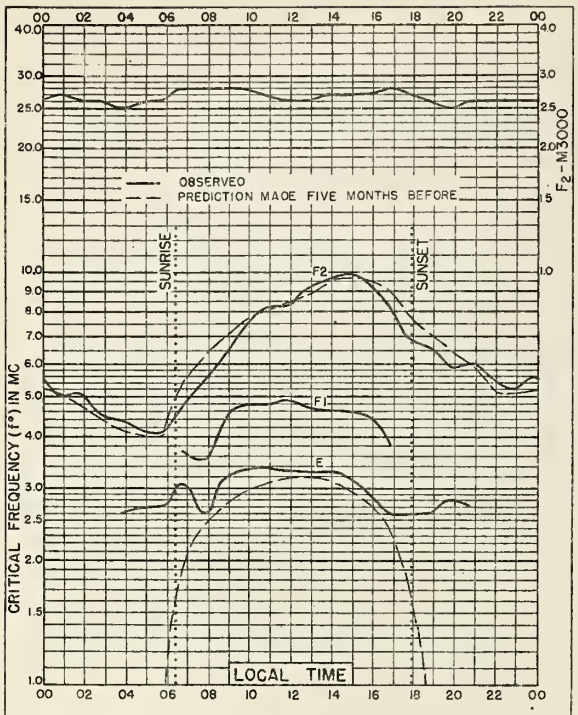

Fig. 34. CHURCHILL, CANADA
58.8°N, 94.2°W MARCH 1947

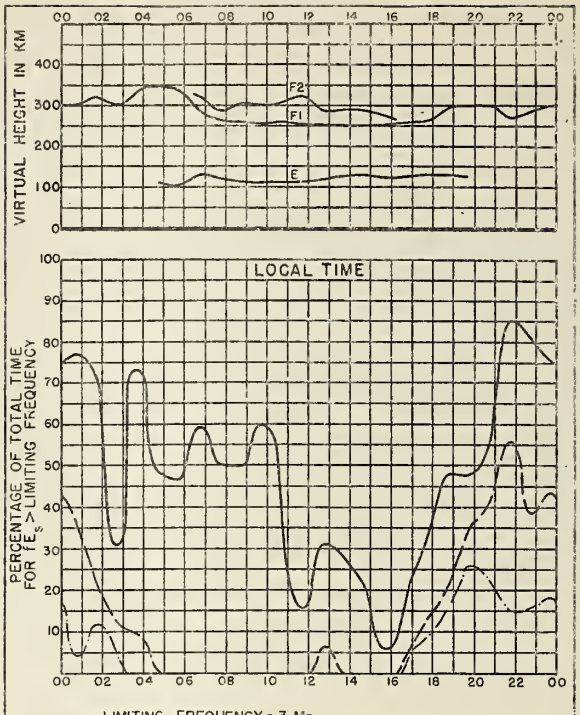

Fig. 35. CHURCHILL, CANADA MARCH 1947

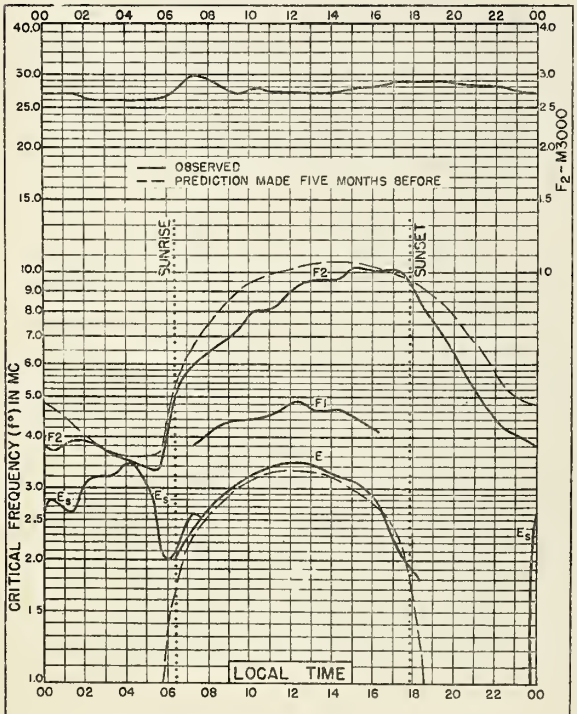

Fig. 36. PRINCE RUPERT, CANADA
54.3°N, 130.3°W MARCH 1947

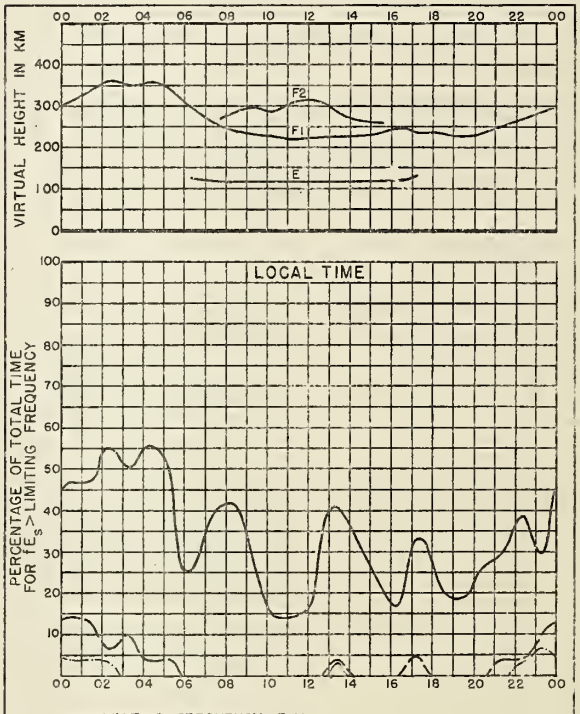

Fig. 37. PRINCE RUPERT, CANADA MARCH 1947

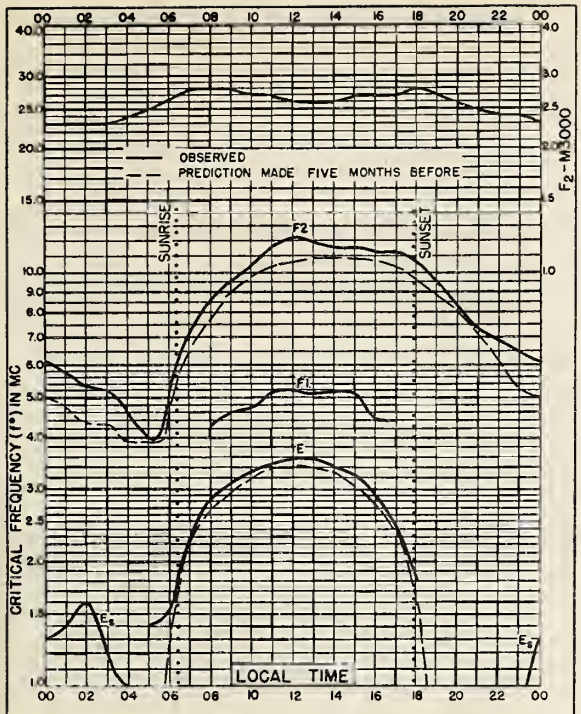

Fig. 38. SLOUGH, ENGLAND
51.5°N, 0.6°W MARCH 1947

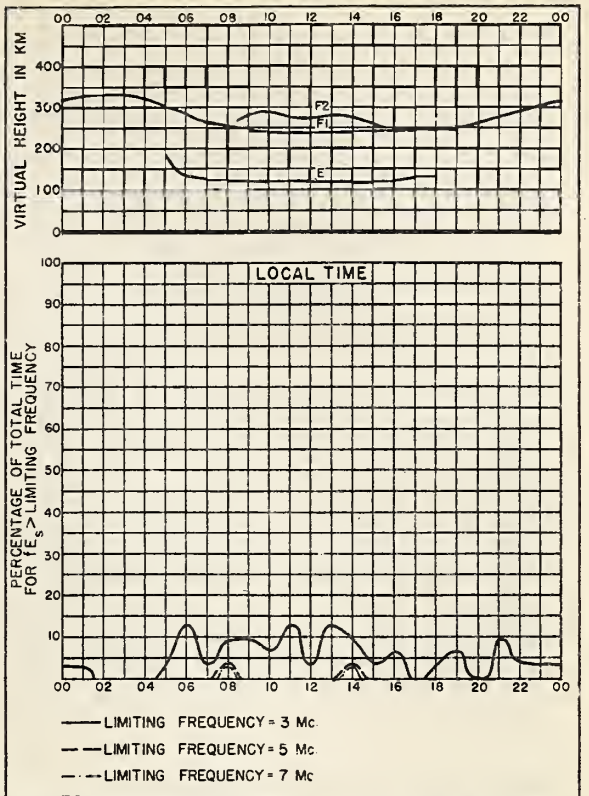

Fig. 39. SLOUGH, ENGLAND MARCH 1947

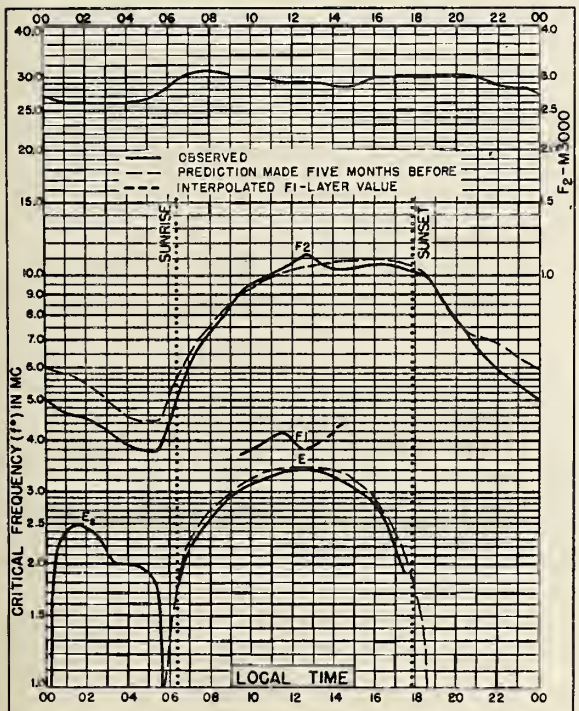

Fig. 40. PORTAGE la PRAIRIE, MANITOBA
49.9°N, 98.3°W MARCH 1947

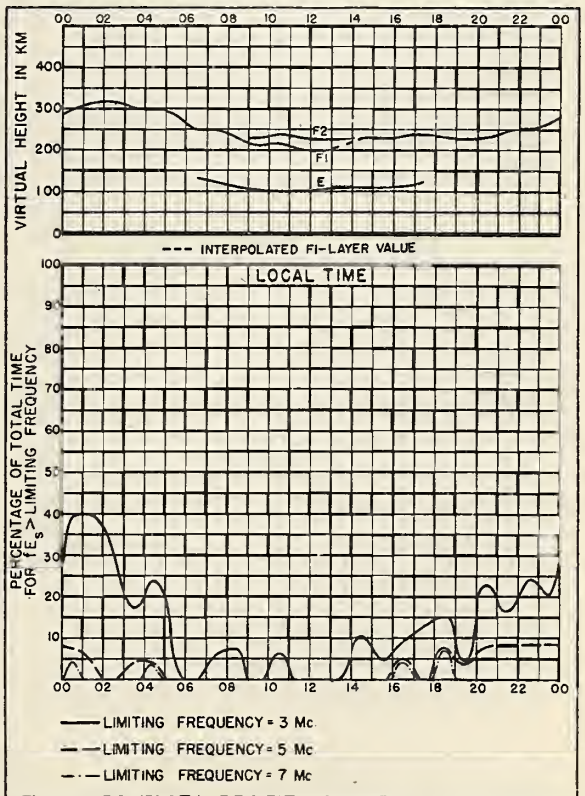

Fig. 41. PORTAGE la PRAIRIE, MANITOBA MARCH 1947

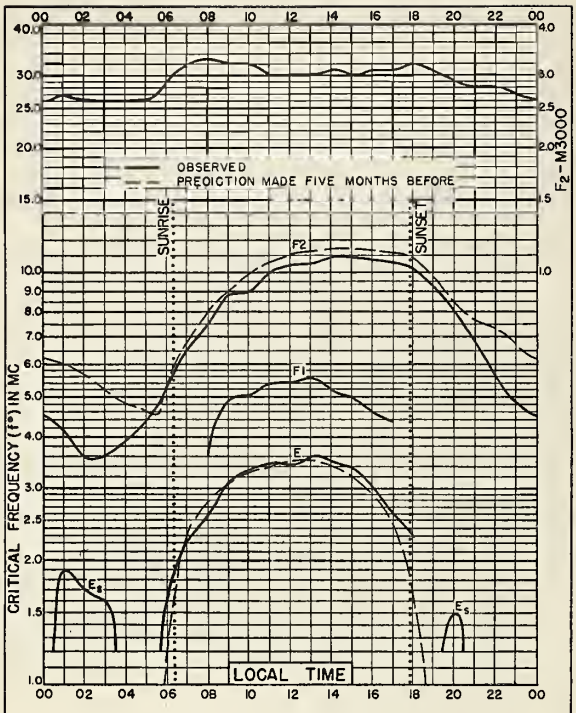

Fig. 42. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W MARCH 1947

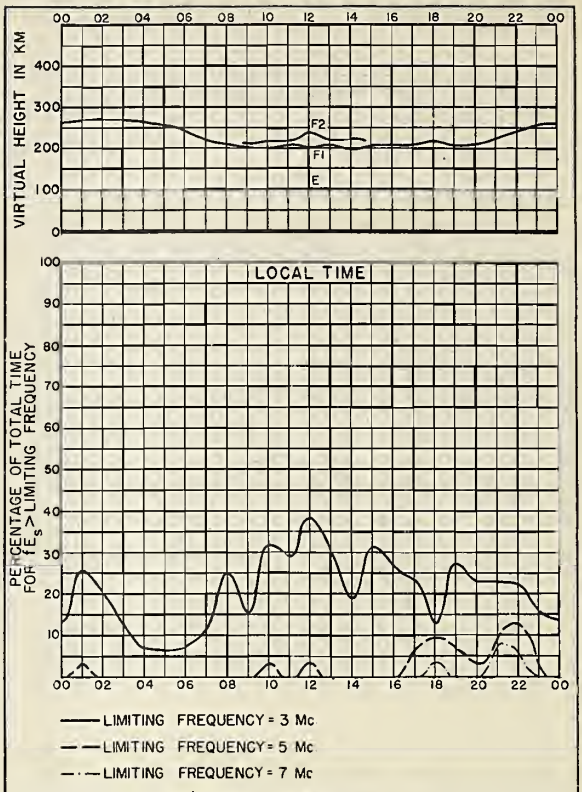

Fig. 43. ST. JOHN'S, NEWFOUNDLAND MARCH 1947

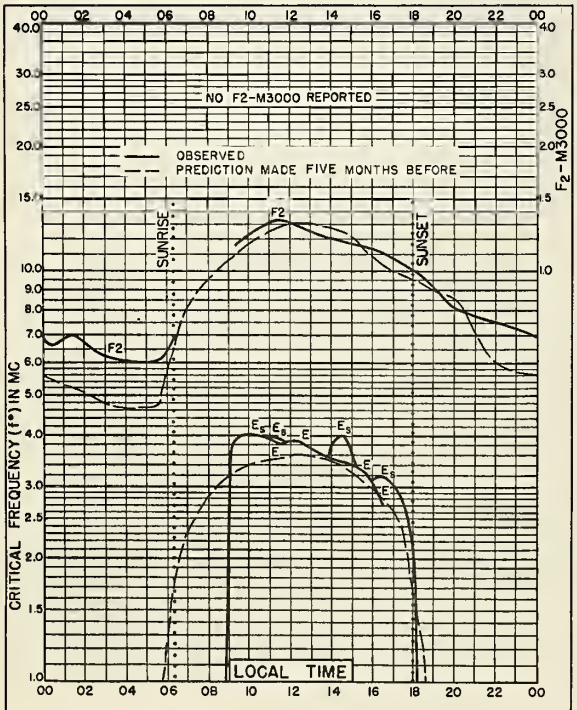

Fig. 44. WAKKANAI, JAPAN
45.4°N, 141.7°E MARCH 1947

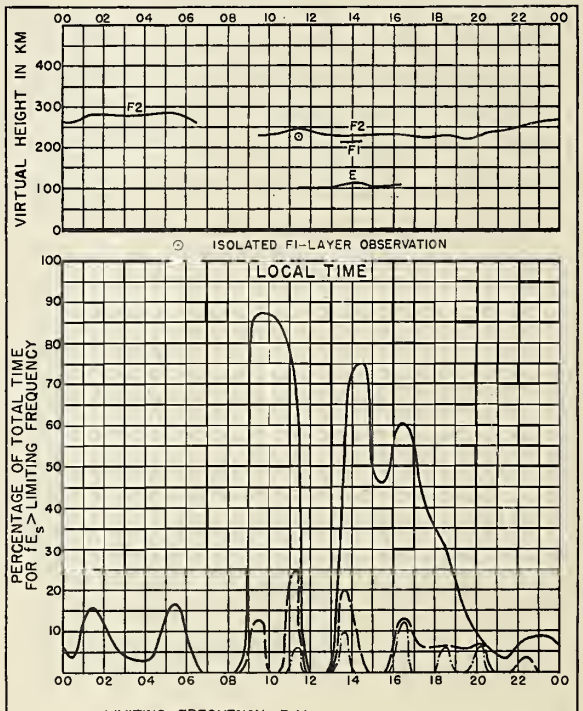

Fig. 45. WAKKANAI, JAPAN MARCH 1947

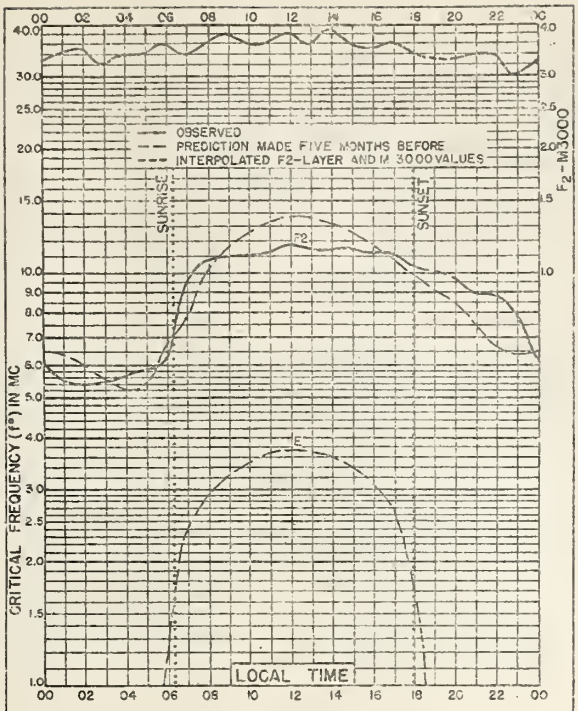

Fig. 46. PEIPING, CHINA
39.9°N, 116.4°E MARCH 1947

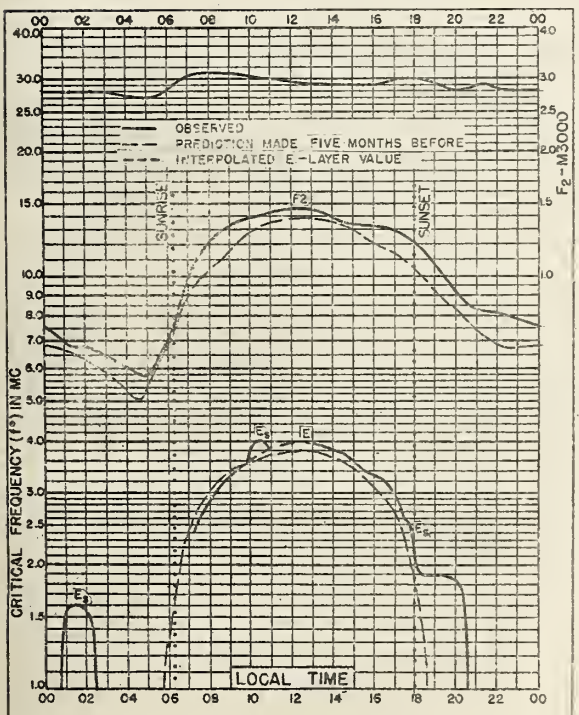

Fig. 47. SHIBATA, JAPAN
38.0°N, 139.3°E MARCH 1947

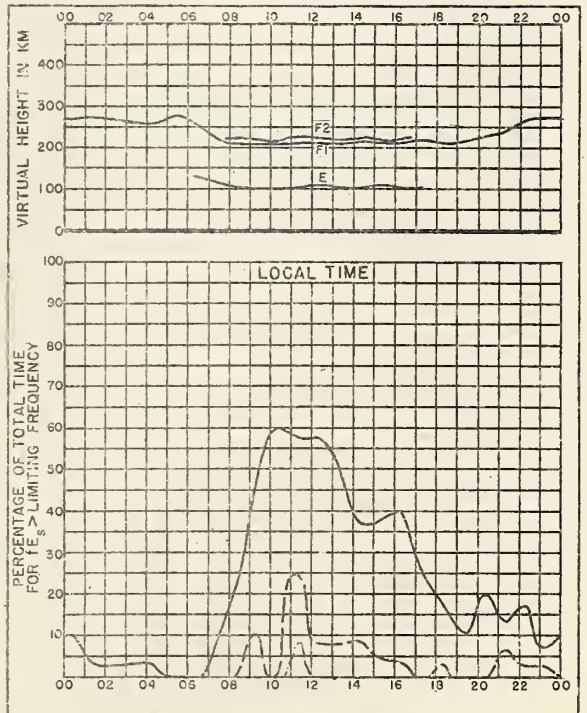

Fig. 48. SHIBATA, JAPAN MARCH 1947

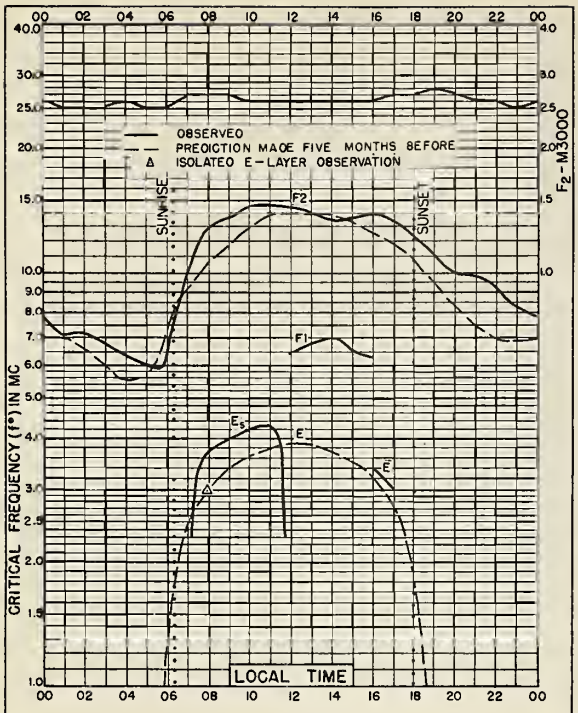

Fig. 49. LANCHOW, CHINA
36.1°N, 103.8°E
MARCH 1947

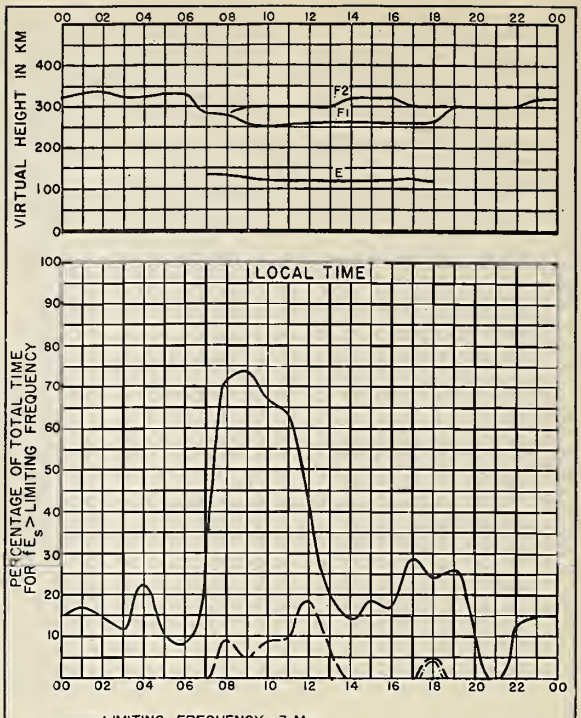

Fig. 50. LANCHOW, CHINA
MARCH 1947

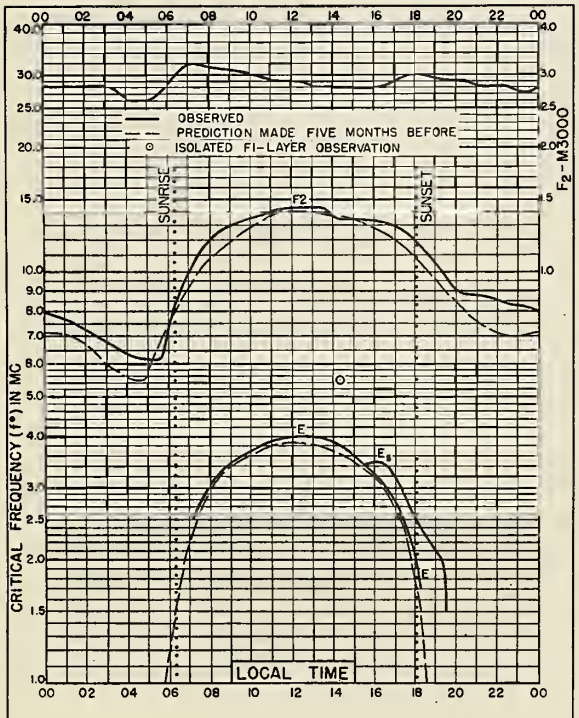

Fig. 51. TOKYO, JAPAN
35.7°N, 139.5°E
MARCH 1947

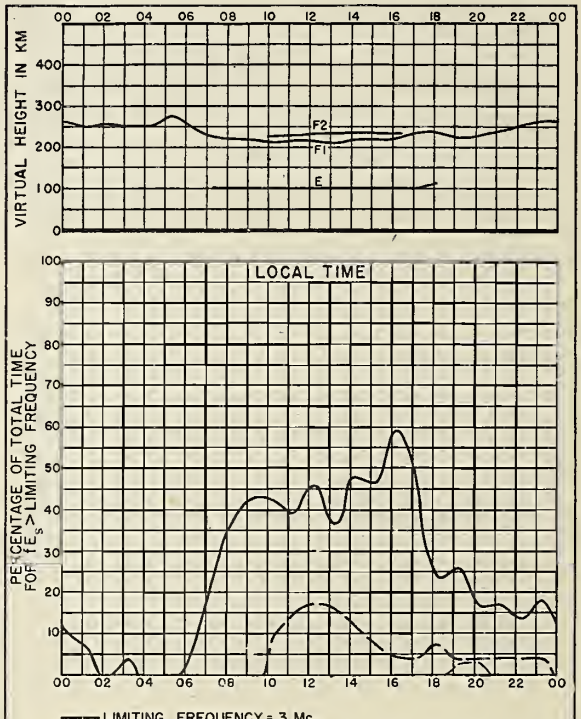

Fig. 52. TOKYO, JAPAN
MARCH 1947

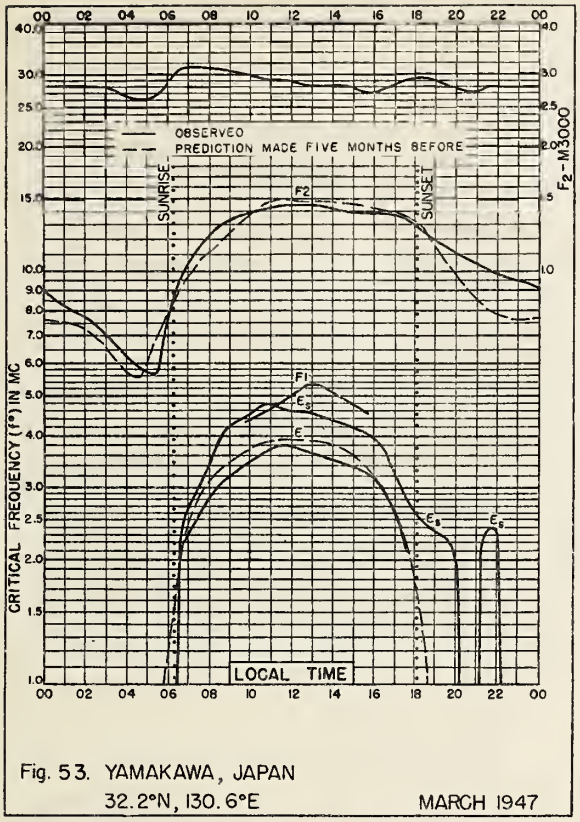

Fig. 53. YAMAKAWA, JAPAN
32.2°N, 130.6°E MARCH 1947

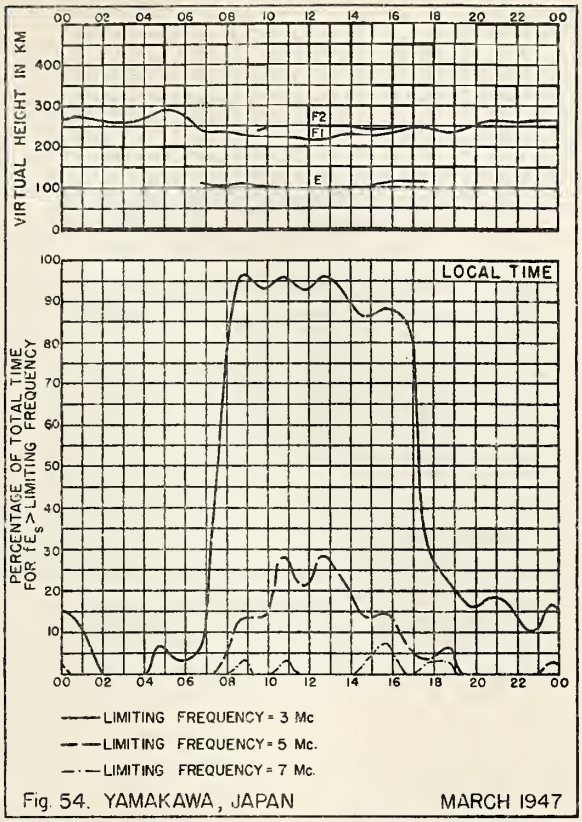

Fig. 54. YAMAKAWA, JAPAN MARCH 1947

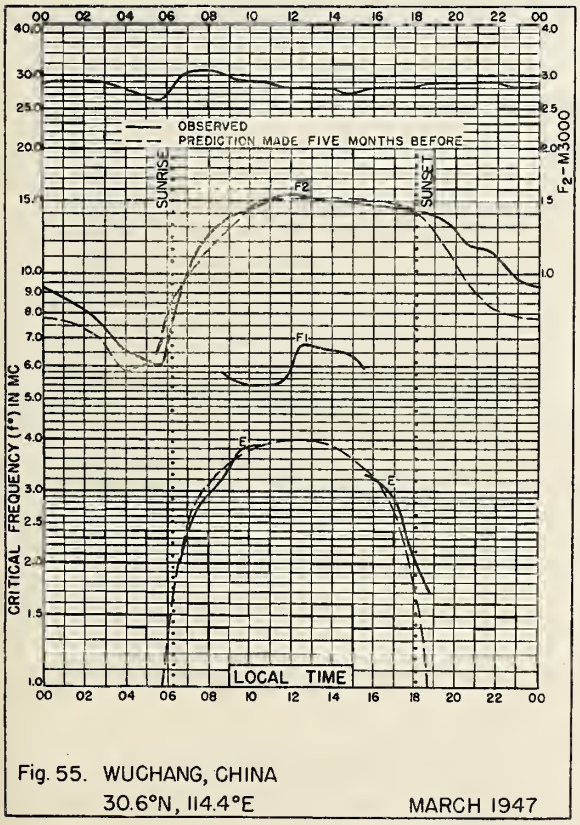

Fig. 55. WUCHANG, CHINA
30.6°N, 114.4°E MARCH 1947

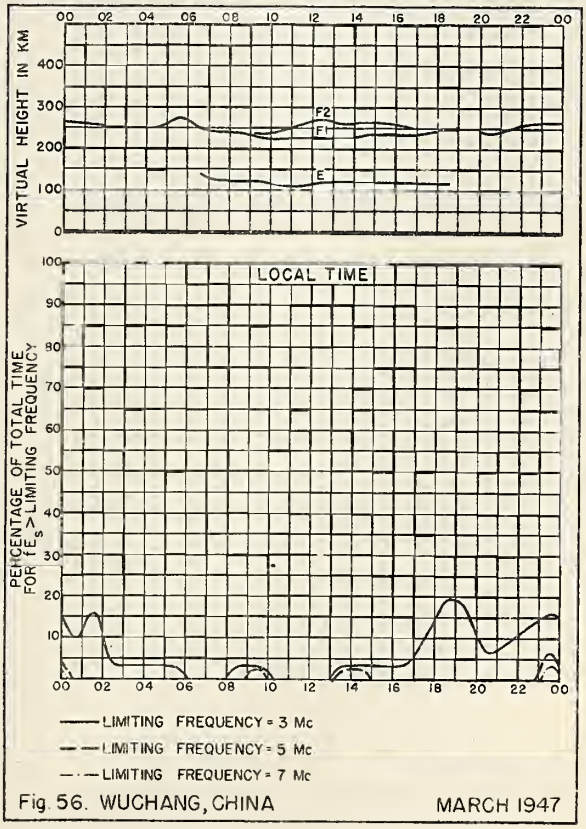

Fig. 56. WUCHANG, CHINA MARCH 1947

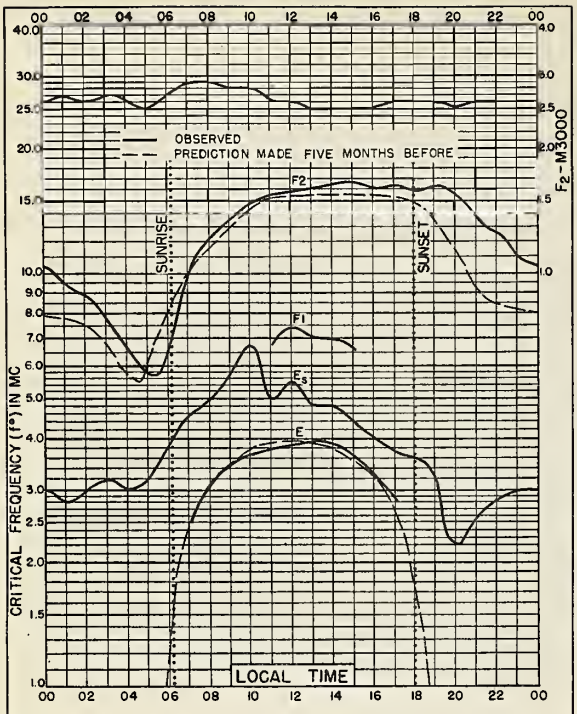

Fig. 57. CHUNGKING, CHINA
29.4°N, 106.8°E MARCH 1947

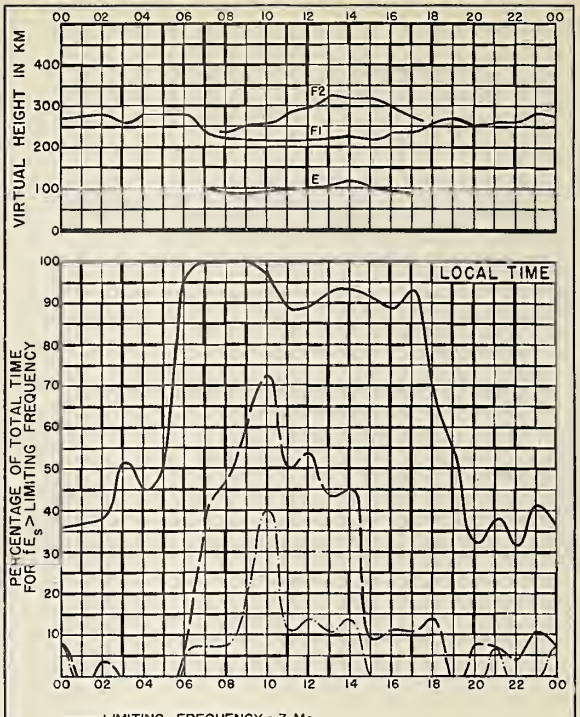

Fig. 58. CHUNGKING, CHINA MARCH 1947

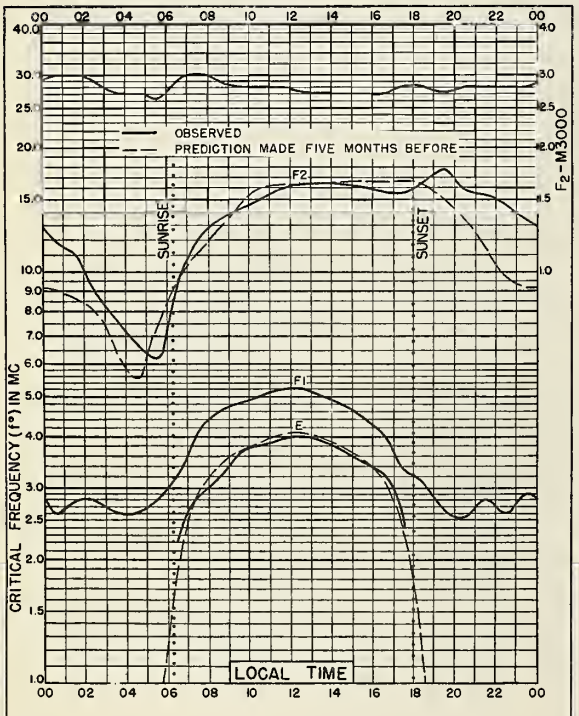

Fig. 59. OKINAWA I.
26.3°N, 127.8°E MARCH 1947

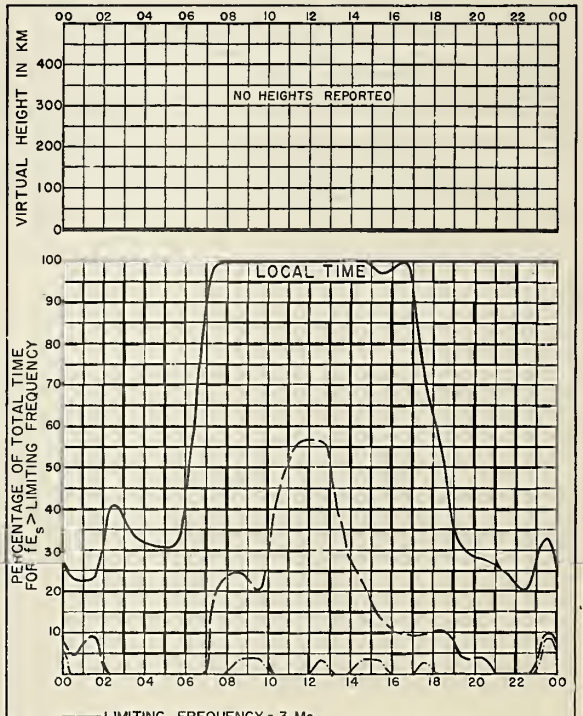

Fig. 60. OKINAWA I. MARCH 1947

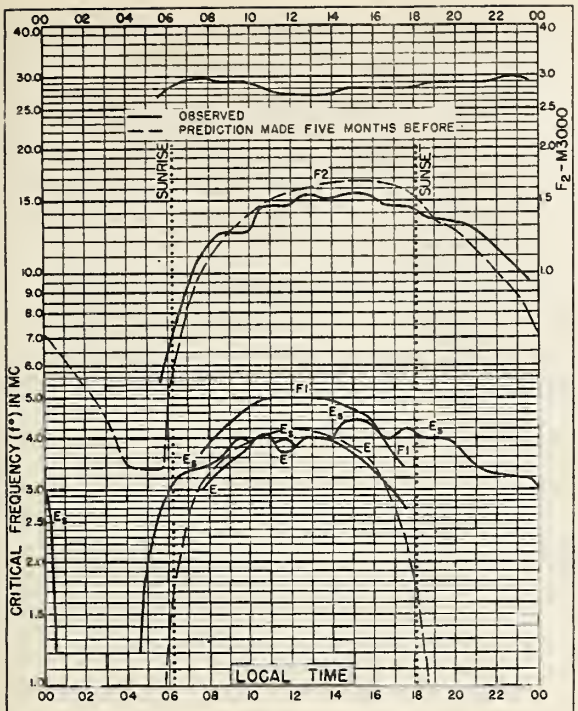

Fig. 61. MAUI, HAWAII
20.8°N, 156.5°W MARCH 1947

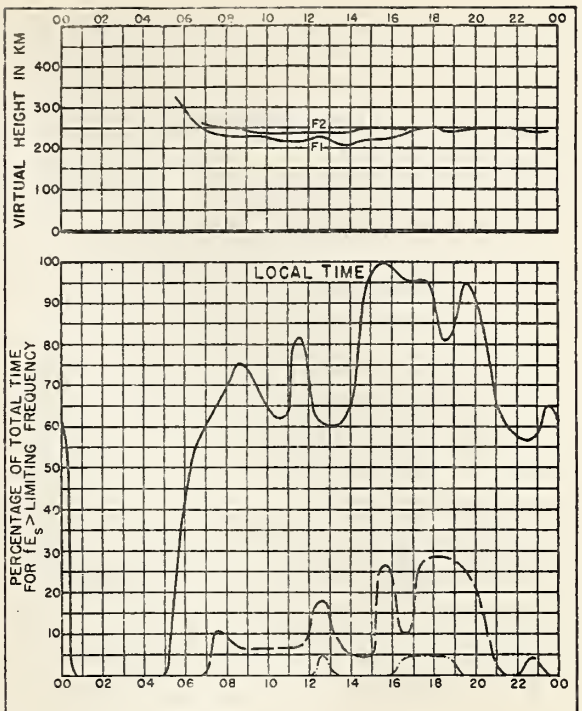

Fig. 62 MAUI, HAWAII MARCH 1947

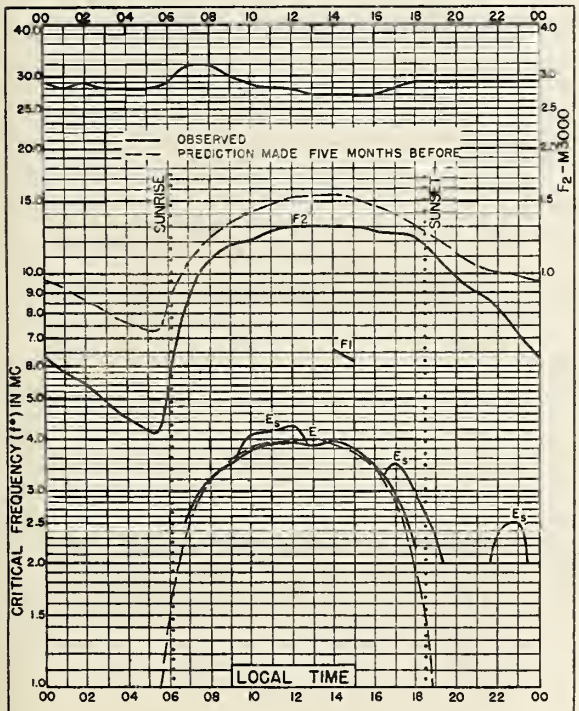

Fig. 63. JOHANNESBURG, U.OF S. AFRICA
26.2°S, 28.0°E MARCH 1947

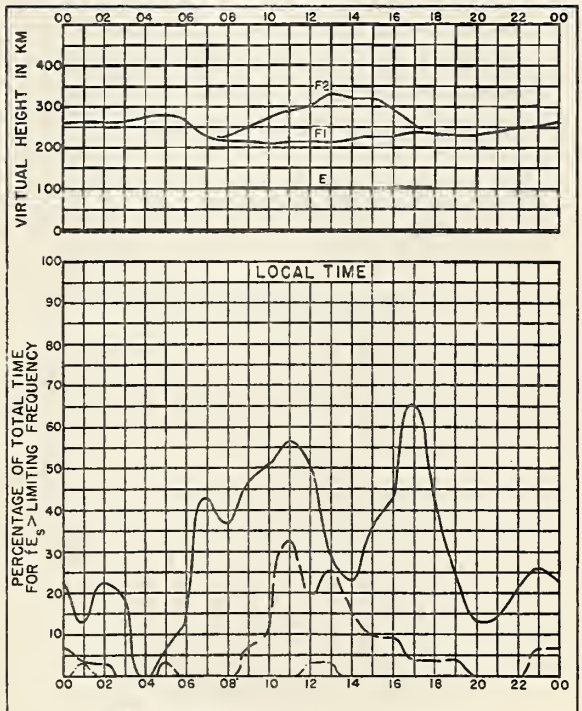

Fig. 64. JOHANNESBURG, U.OF S. AFRICA MARCH 1947

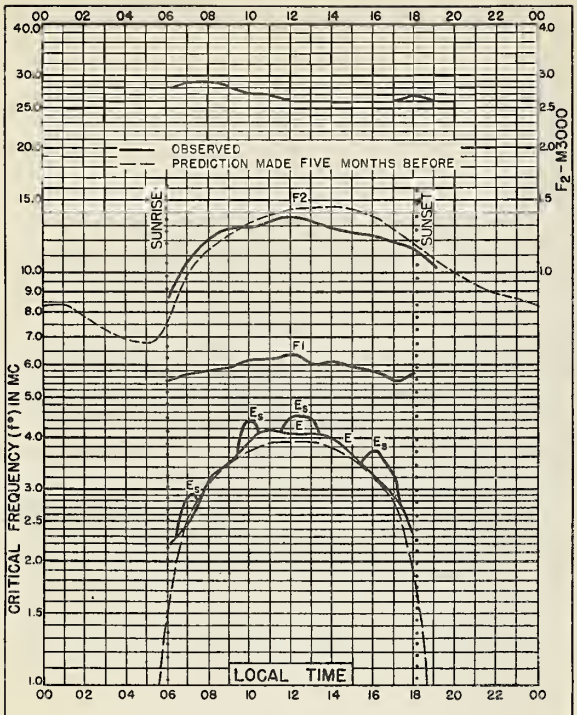

Fig. 65. KERMADEC IS.
29.2°S, 177.9°W
MARCH 1947

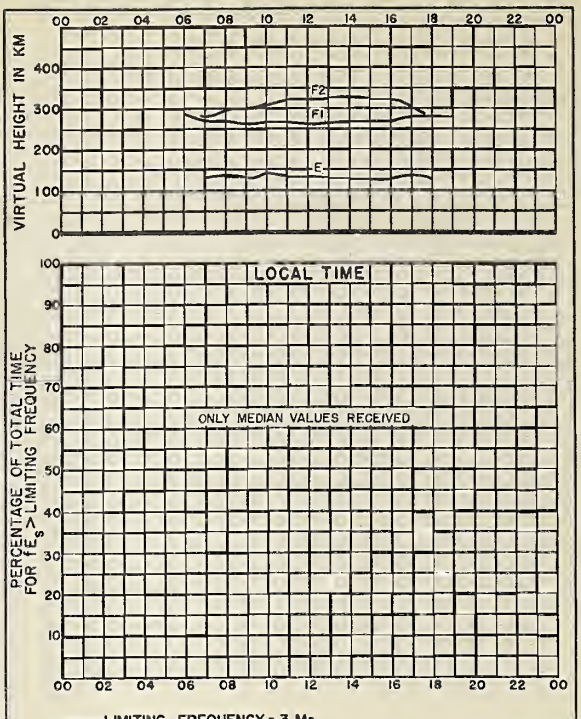

Fig. 66. KERMADEC IS.
MARCH 1947

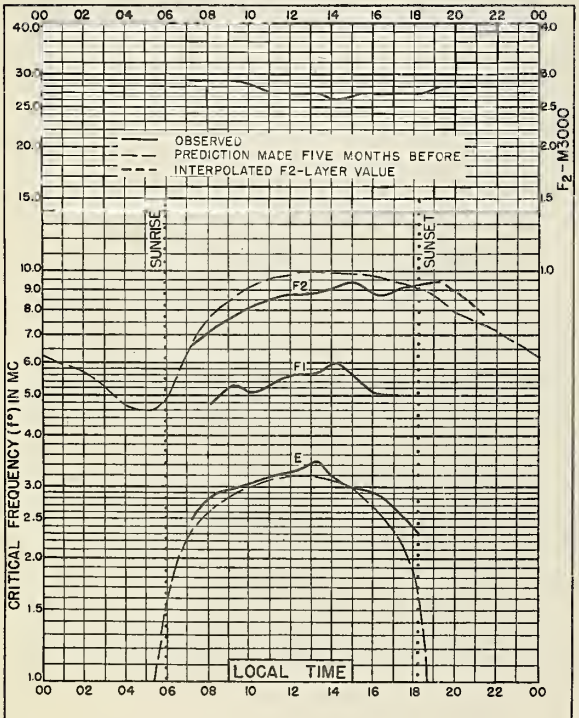

Fig. 67. CAMPBELL I.
52.5°S, 169.2°E
MARCH 1947

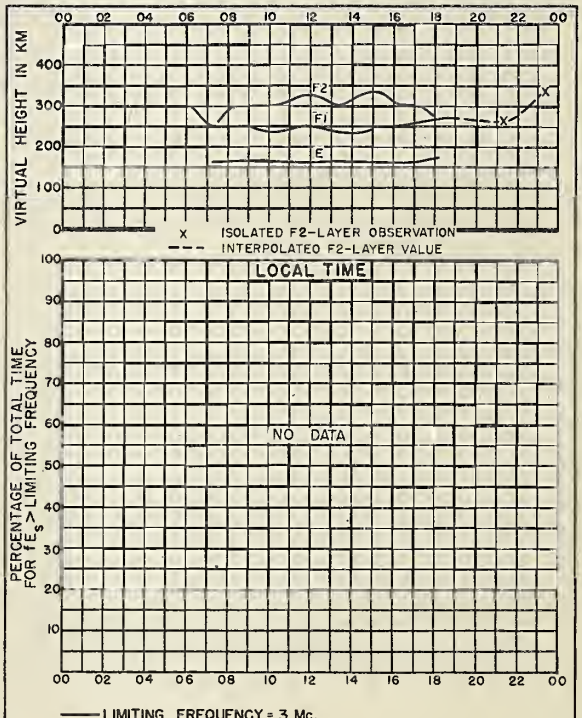

Fig. 68. CAMPBELL I.
MARCH 1947

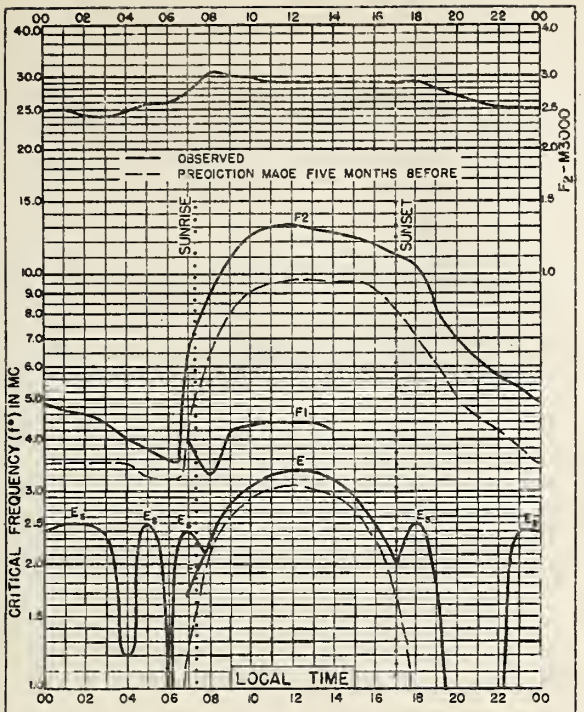

Fig. 69. SLOUGH, ENGLAND
51.5°N, 0.6°W FEBRUARY 1947

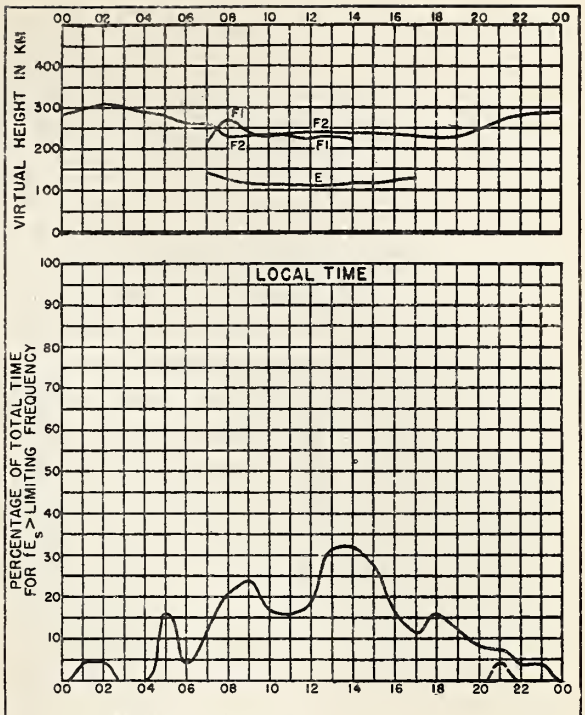

Fig. 70. SLOUGH, ENGLAND FEBRUARY 1947

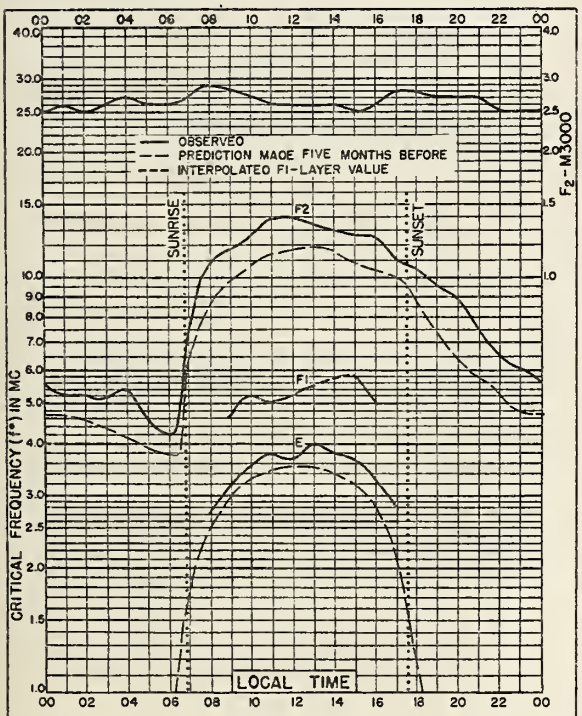

Fig. 71. LANCHOW, CHINA
36.1°N, 103.8°E FEBRUARY 1947

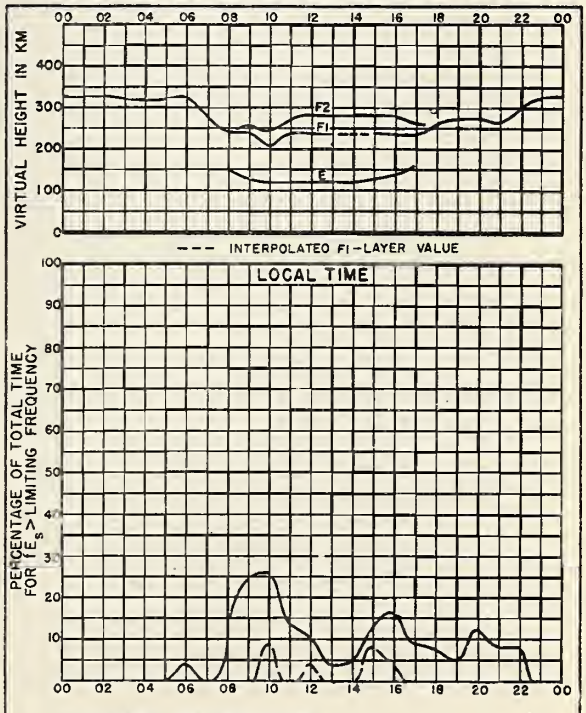

Fig. 72. LANCHOW, CHINA FEBRUARY 1947

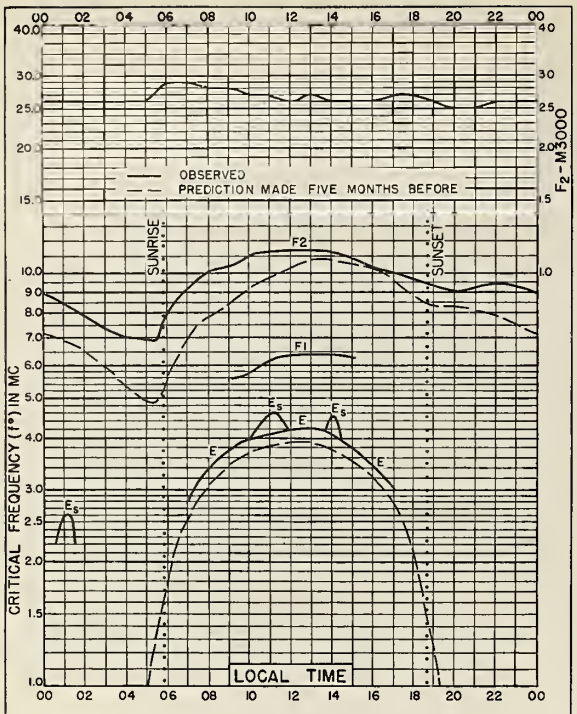

Fig. 73. BRISBANE, AUSTRALIA
27.5°S, 153.0°E FEBRUARY 1947

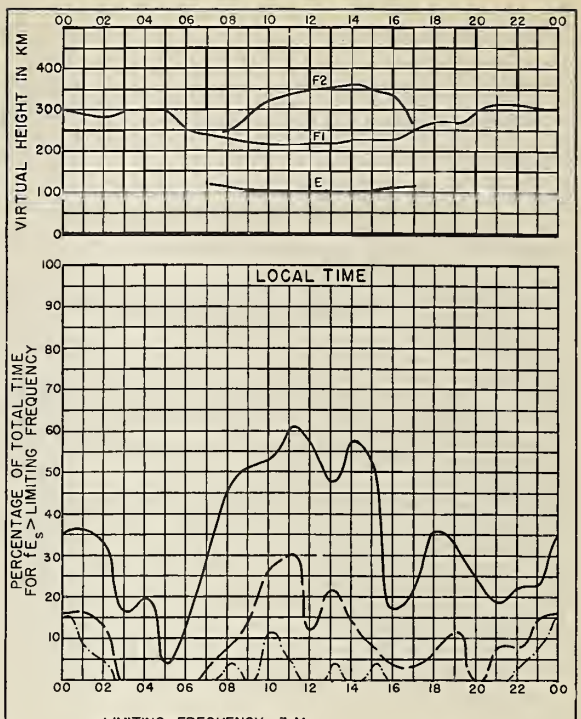

Fig. 74. BRISBANE, AUSTRALIA FEBRUARY 1947

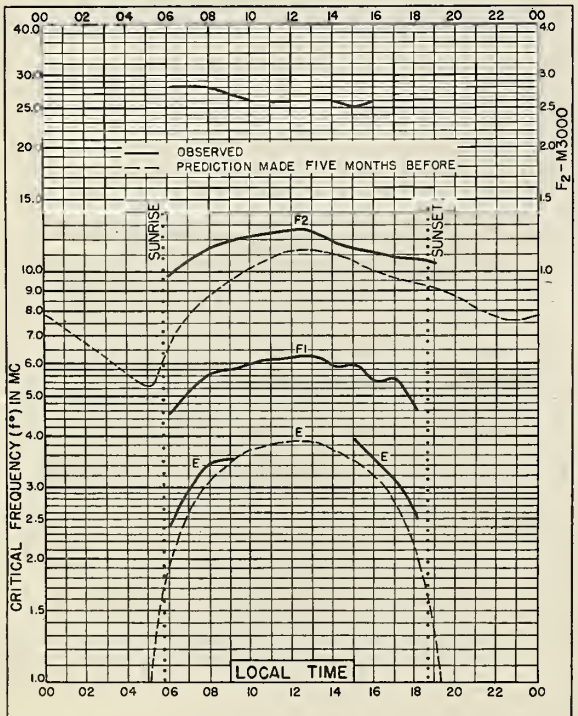

Fig 75. KERMADEC IS.
29.2°S, 177.9°W FEBRUARY 1947

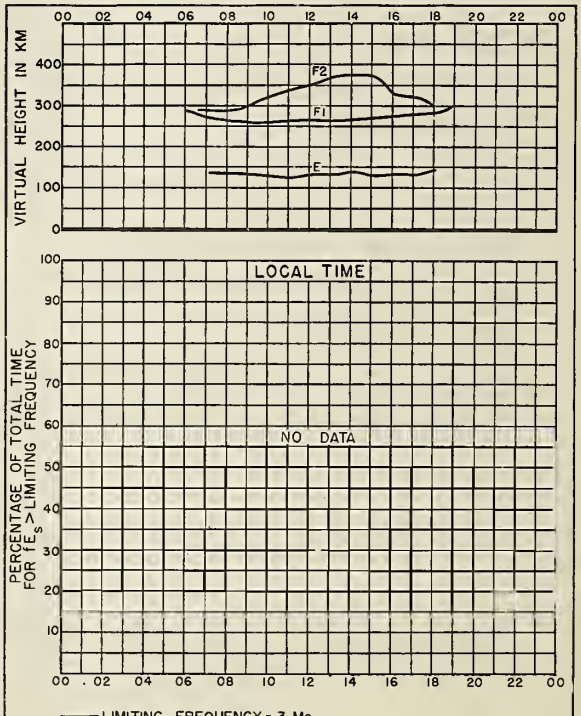

Fig. 76. KERMADEC IS. FEBRUARY 1947

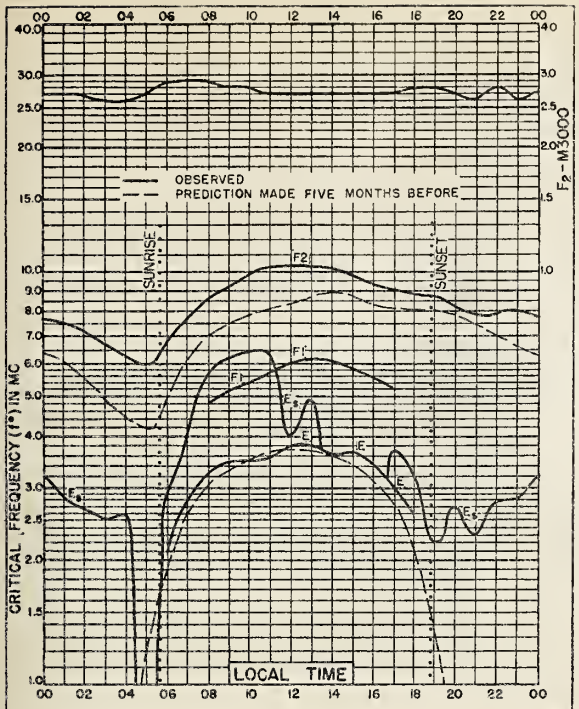

Fig. 77. CANBERRA, AUSTRALIA
35.3°S, 149.0°E FEBRUARY 1947

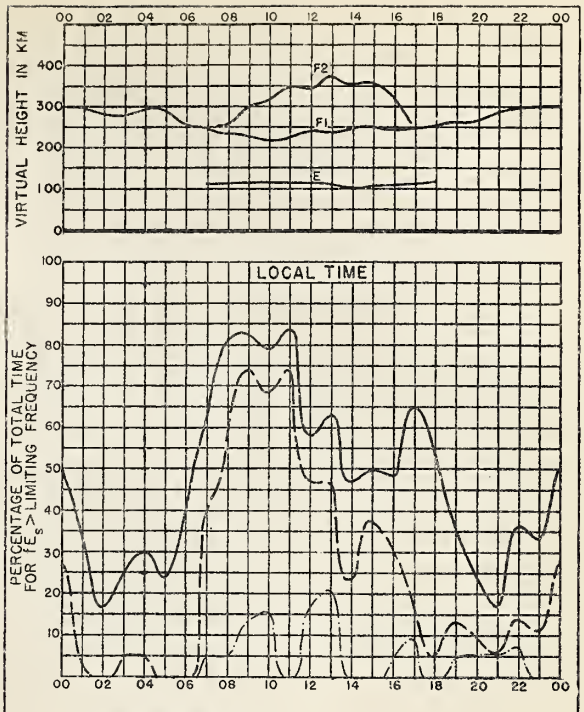

Fig. 78. CANBERRA, AUSTRALIA FEBRUARY 1947

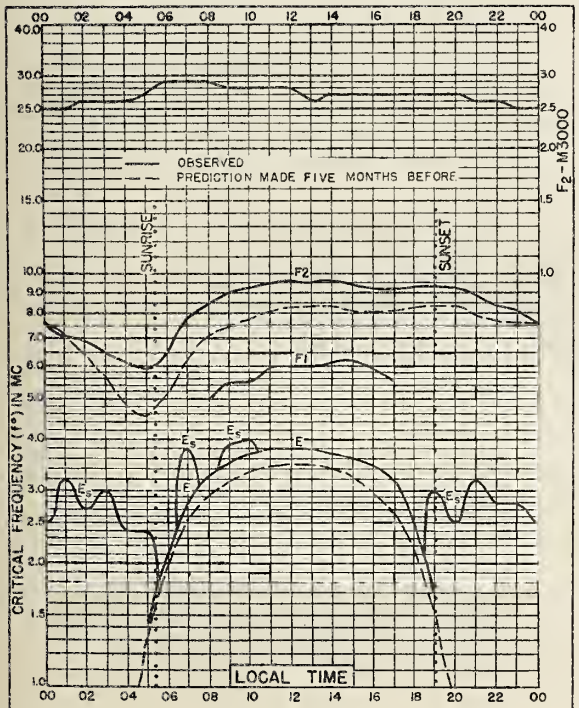

Fig. 79. CHRISTCHURCH, N.Z.
43.5°S, 172.7°E FEBRUARY 1947

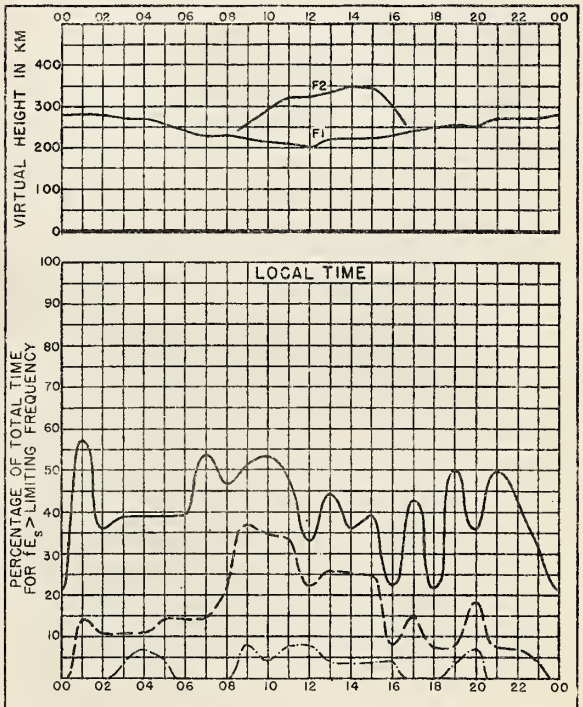

Fig. 80. CHRISTCHURCH, N.Z. FEBRUARY 1947

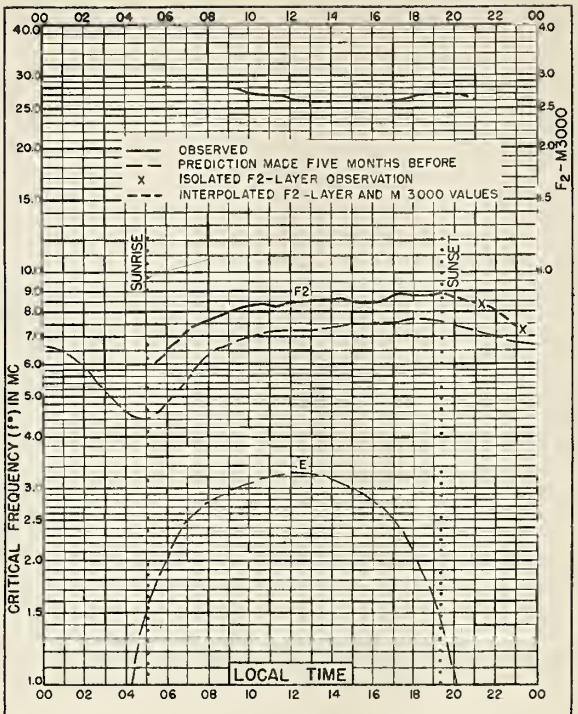

Fig. 81. CAMPBELL I.
52.5°S, 169.2°E FEBRUARY 1947

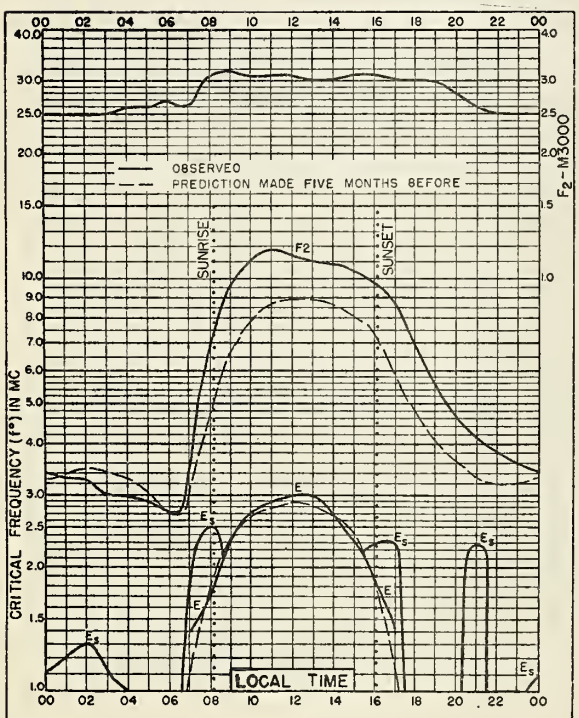

Fig. 82 SLOUGH, ENGLAND
51.5°N, 0.6°W JANUARY 1947

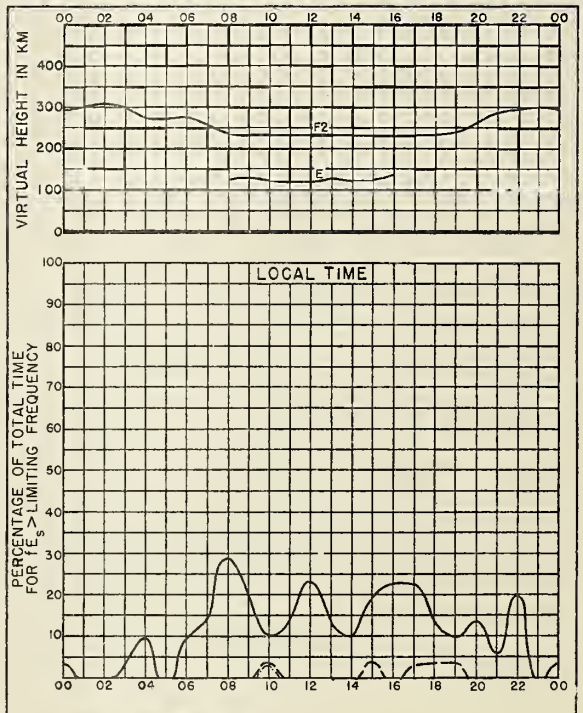

Fig. 83. SLOUGH, ENGLAND JANUARY 1947

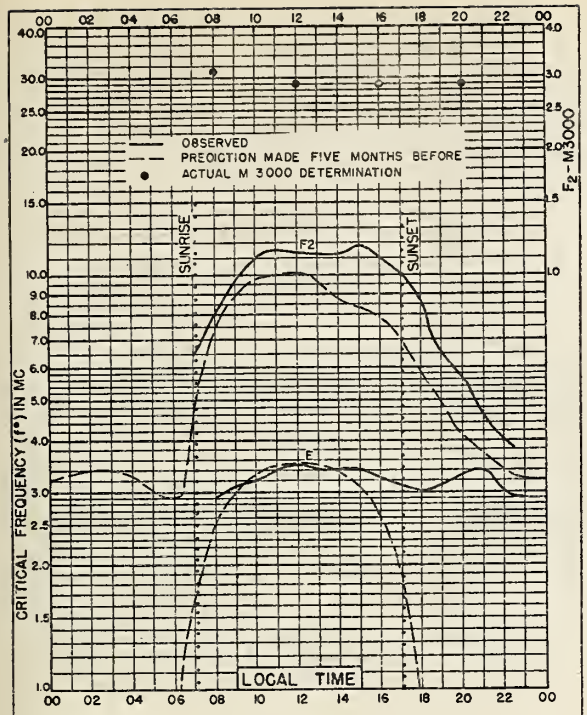

Fig. 84. PESHAWAR, INDIA
34.0°N, 71.5°E JANUARY 1947

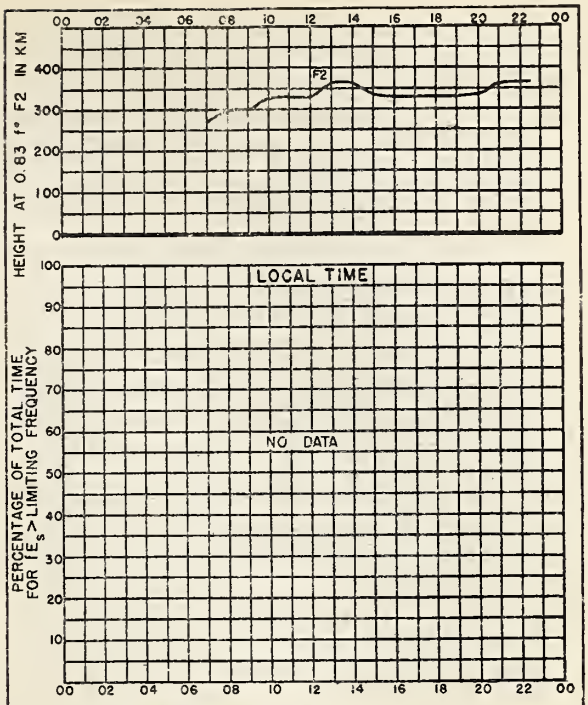

Fig. 85. PESHAWAR, INDIA JANUARY 1947

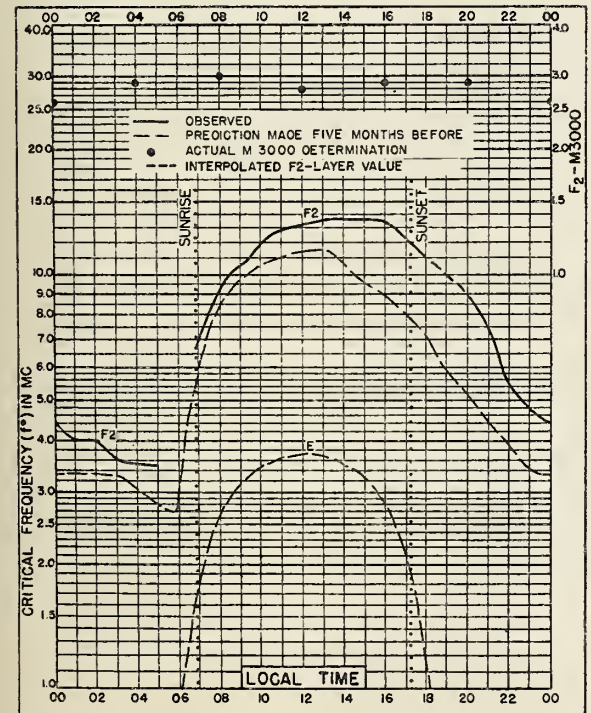

Fig. 86. DELHI, INDIA
28.6°N, 77.1°E JANUARY 1947

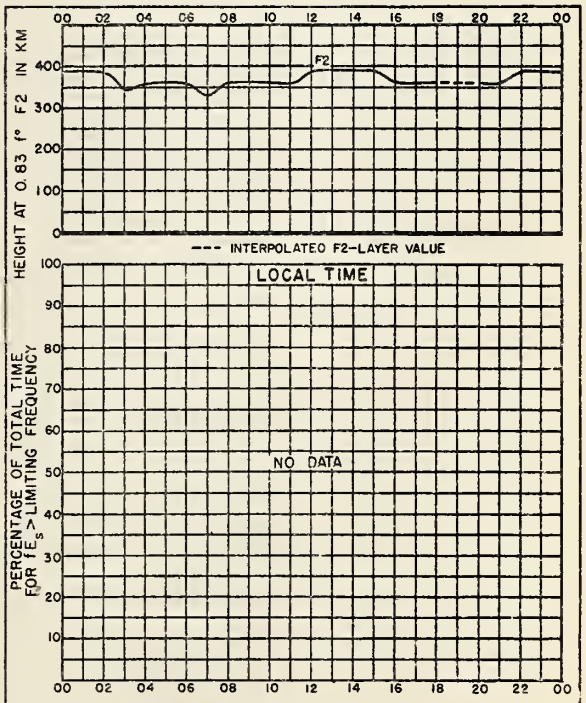

Fig. 87. DELHI, INDIA JANUARY 1947

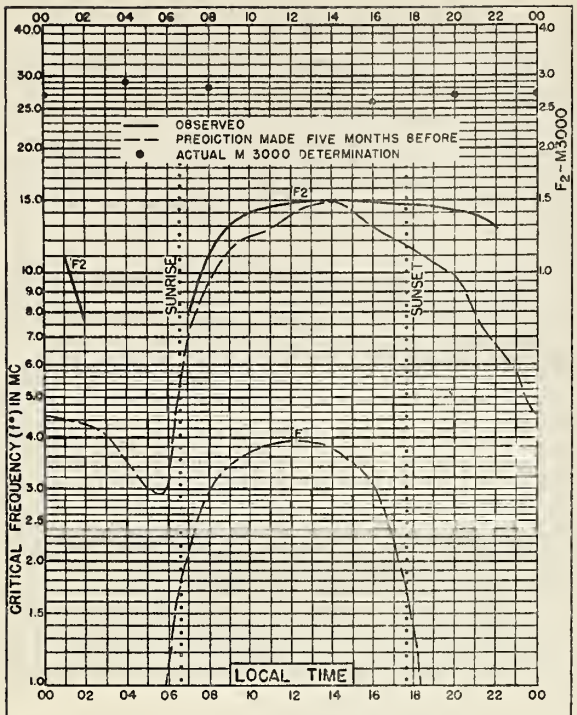

Fig. 88. BOMBAY, INDIA
19.0°N, 73.0°E JANUARY 1947

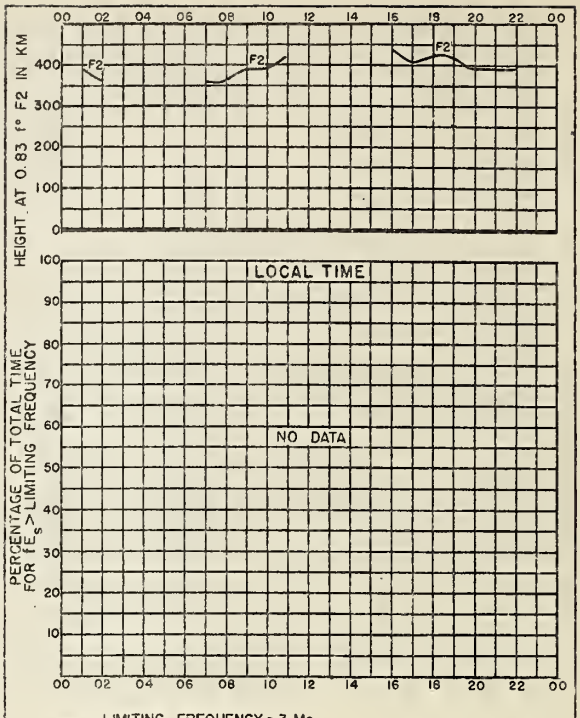

Fig. 89. BOMBAY, INDIA JANUARY 1947

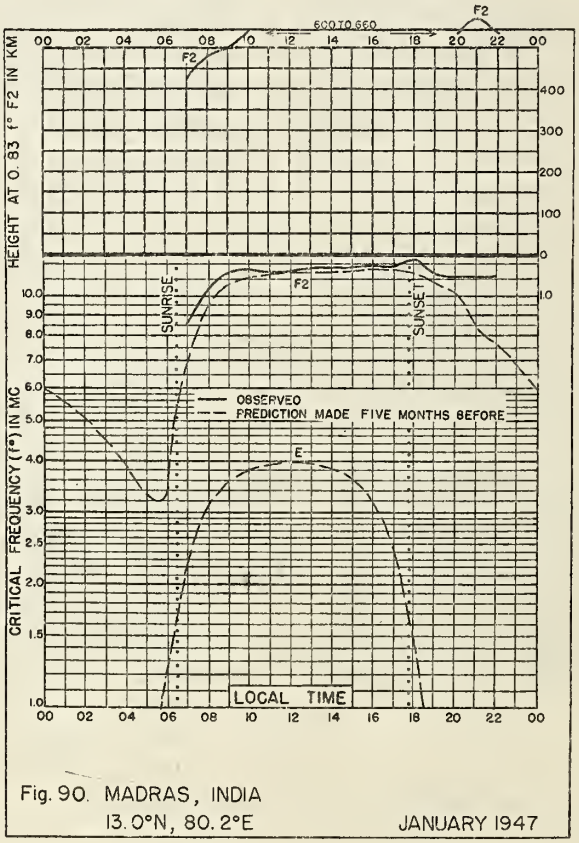

Fig. 90. MADRAS, INDIA
13.0°N, 80.2°E JANUARY 1947

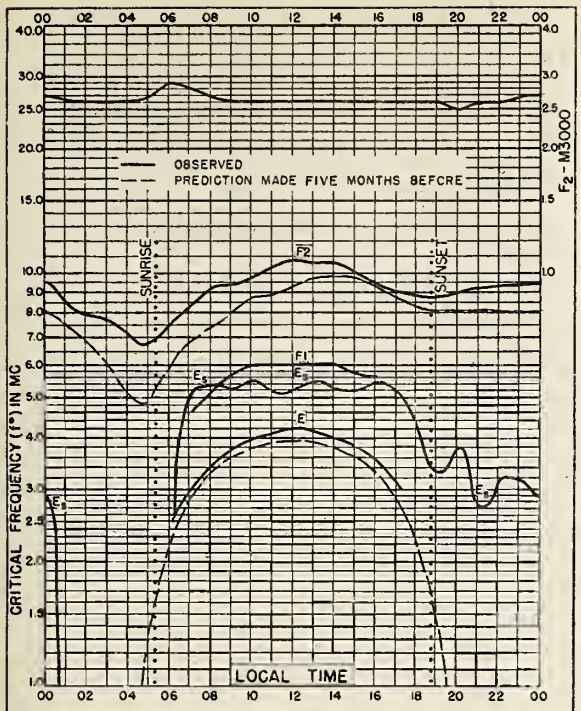

Fig. 91. BRISBANE, AUSTRALIA
27.5°S, 153.0°E JANUARY 1947

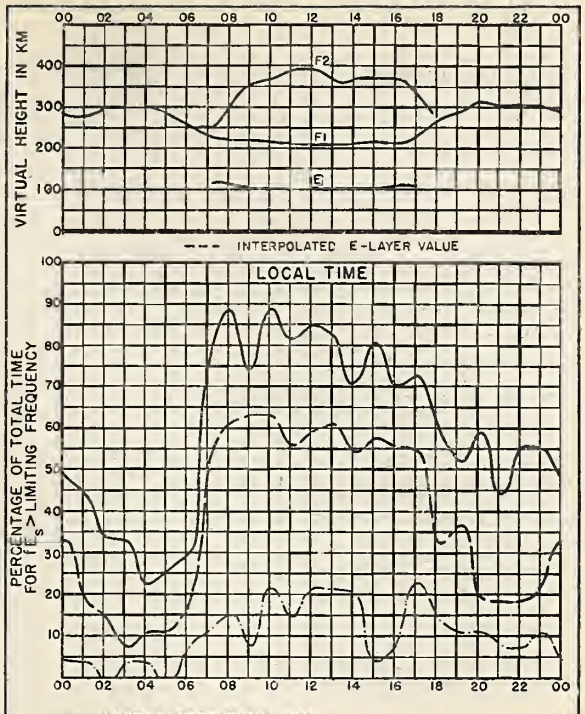

Fig. 92. BRISBANE, AUSTRALIA JANUARY 1947

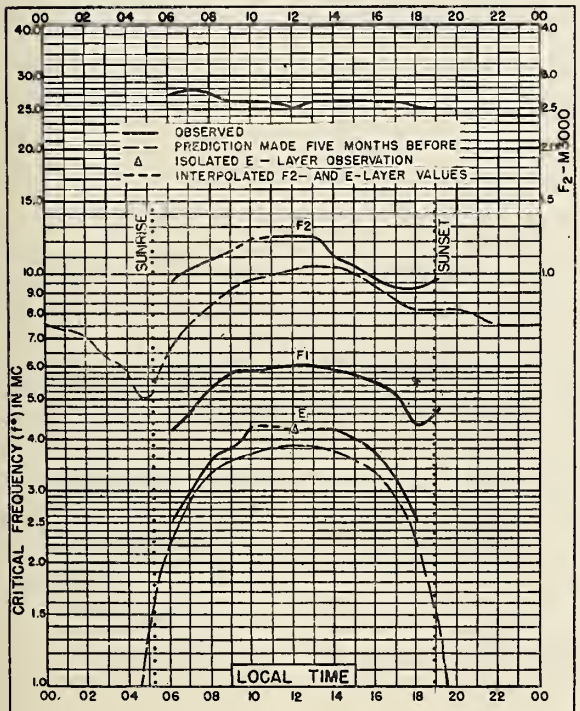

Fig. 93. KERMADEC IS.
29.2°S, 177.9°W JANUARY 1947

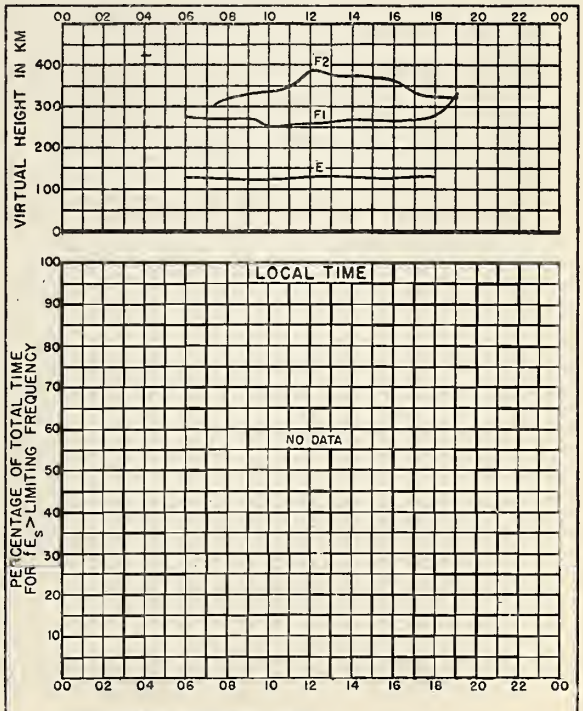

Fig. 94. KERMADEC IS. JANUARY 1947

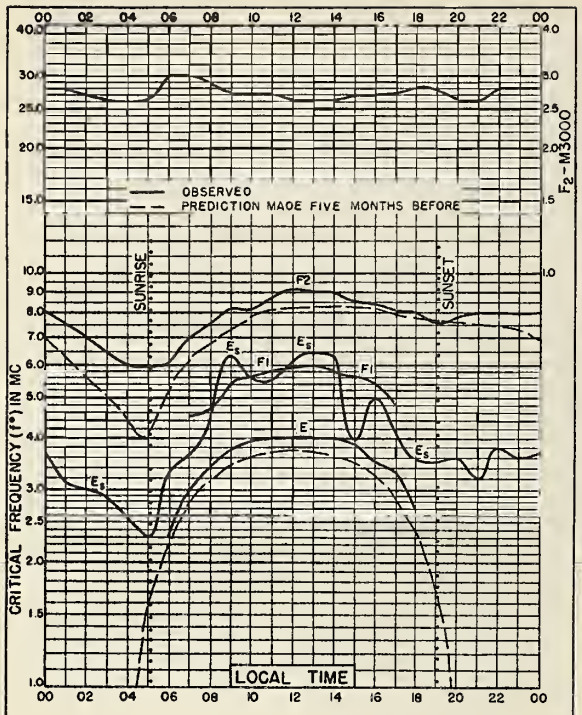

Fig. 95. CANBERRA, AUSTRALIA
35.3°S, 149.0°E JANUARY 1947

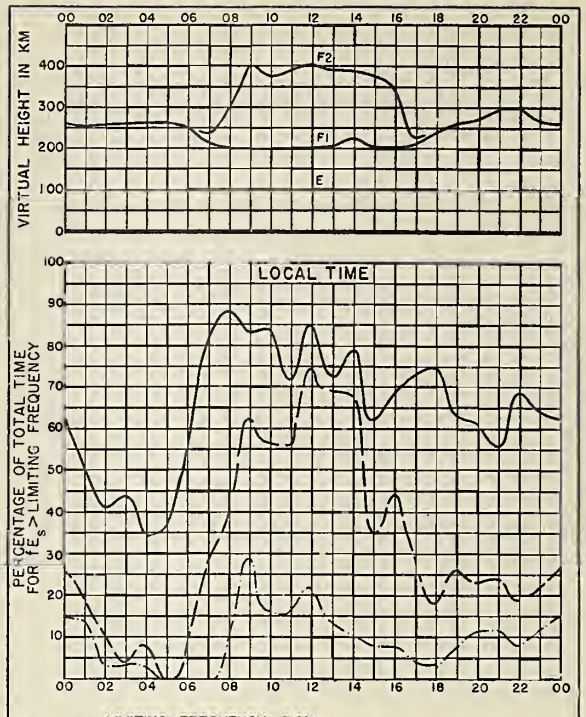

Fig. 96. CANBERRA, AUSTRALIA JANUARY 1947

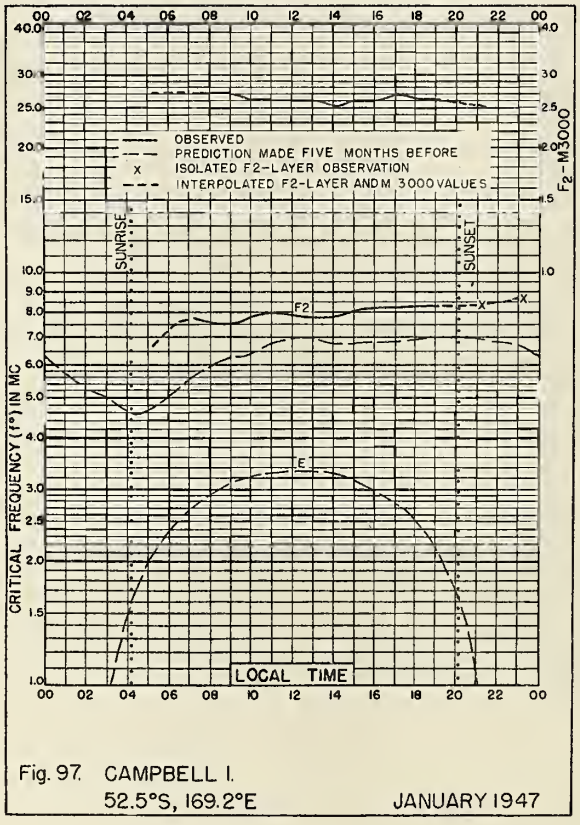

Fig. 97. CAMPBELL I.
52.5°S, 169.2°E JANUARY 1947

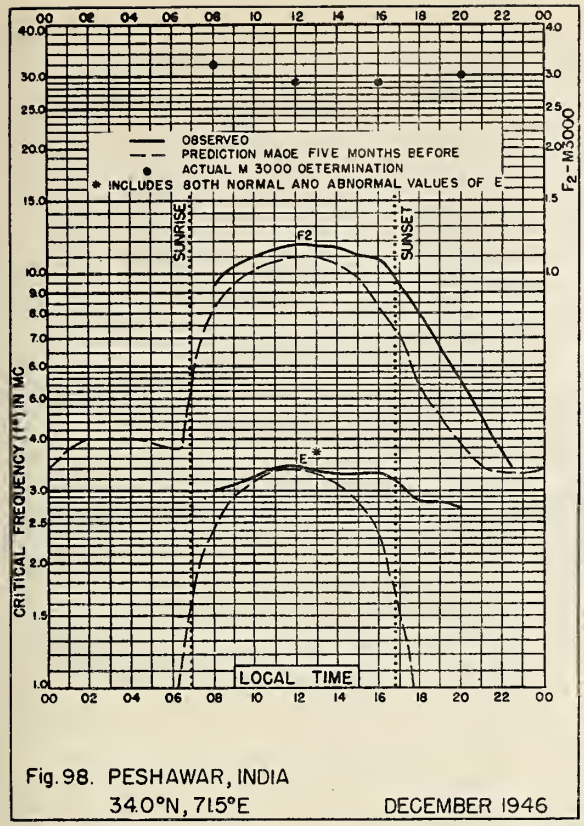

Fig. 98. PESHAWAR, INDIA
34.0°N, 71.5°E DECEMBER 1946

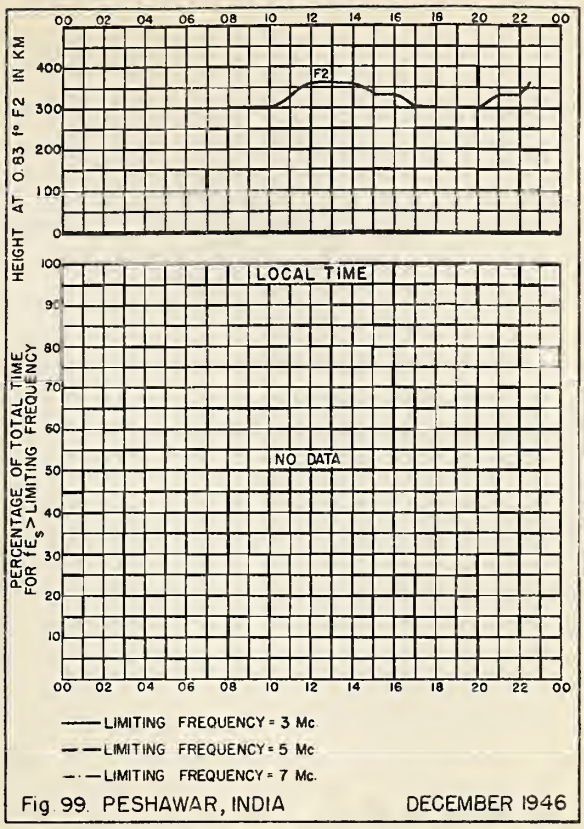

Fig. 99. PESHAWAR, INDIA DECEMBER 1946

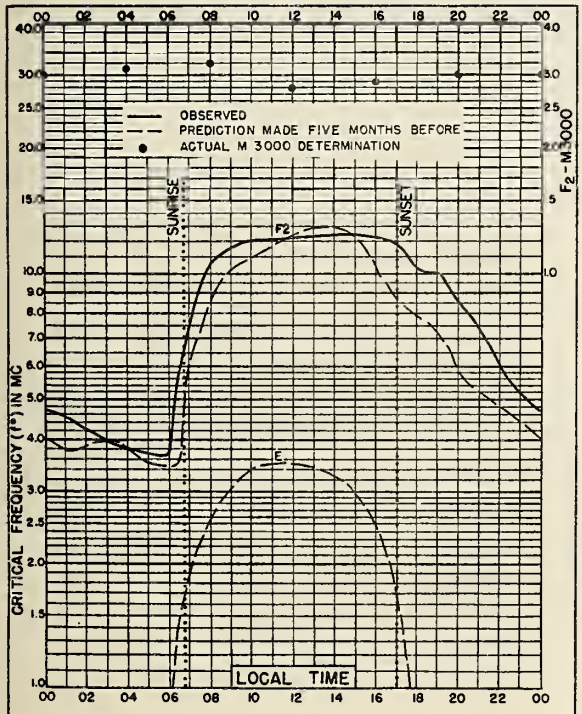

Fig. 100. DELHI, INDIA
28.6°N, 77.1°E DECEMBER 1946

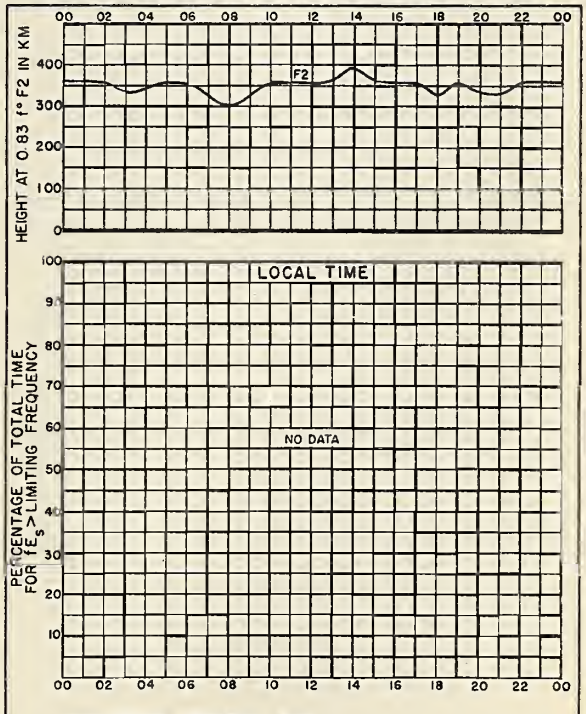

Fig. 101. DELHI, INDIA DECEMBER 1946

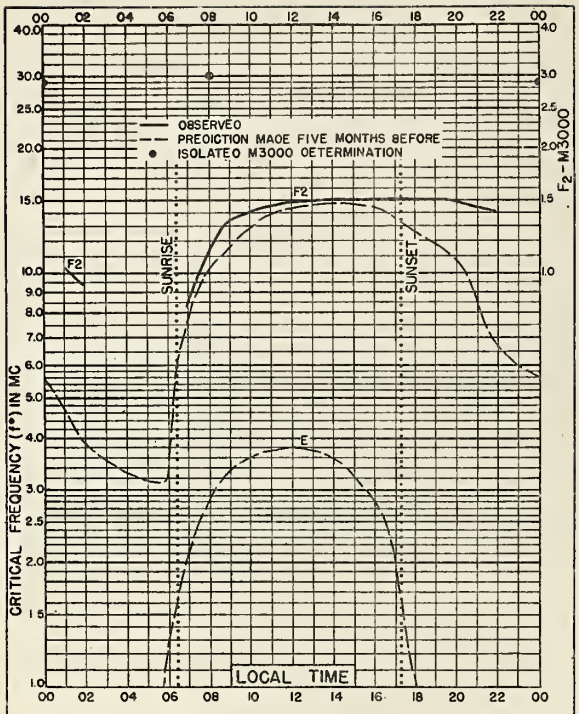

Fig. 102 BOMBAY, INDIA
19.0°N, 73.0°E DECEMBER 1946

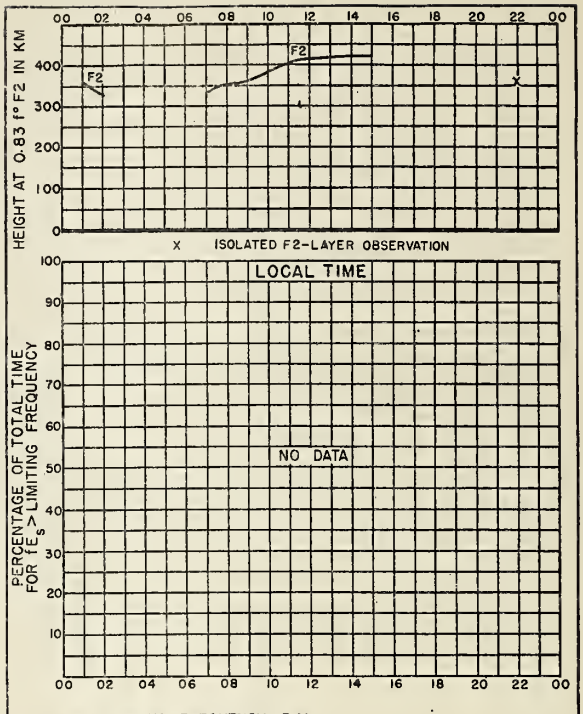

Fig. 103. BOMBAY, INDIA DECEMBER 1946

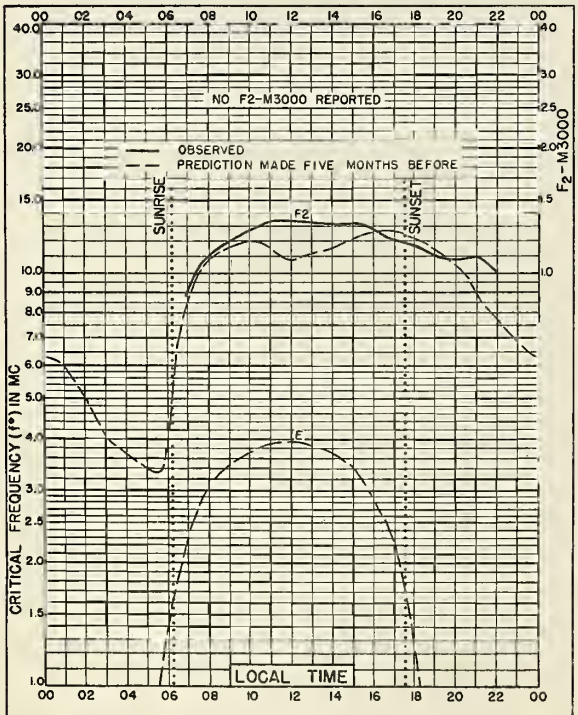

Fig. 104. MADRAS, INDIA
13.0°N, 80.2°E DECEMBER 1946

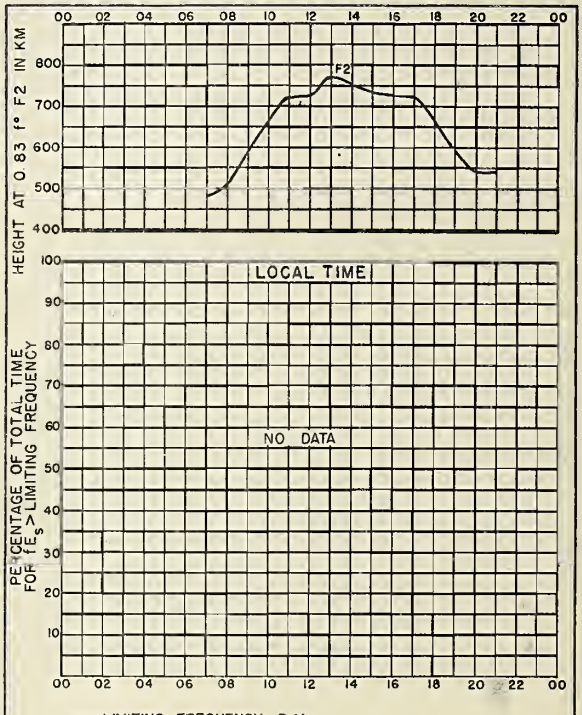

Fig. 105. MADRAS, INDIA DECEMBER 1946

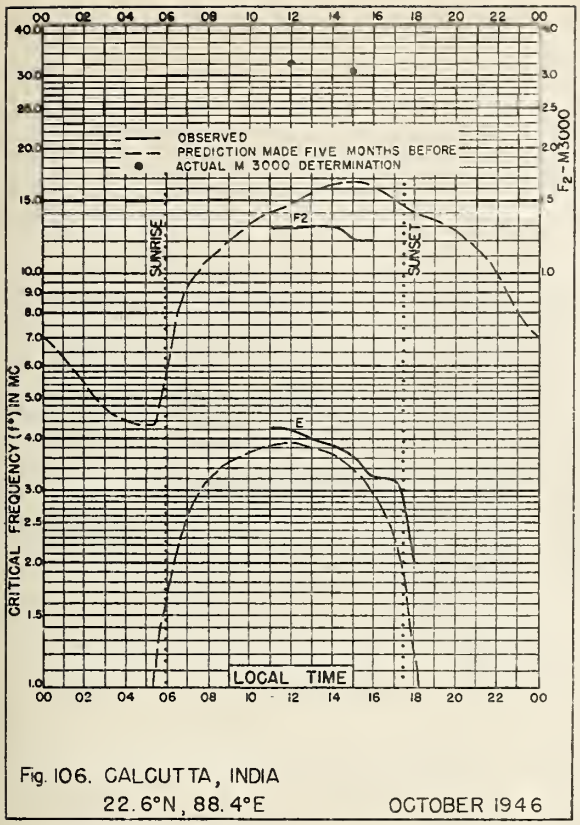

Fig. 106. CALCUTTA, INDIA
22.6°N, 88.4°E OCTOBER 1946

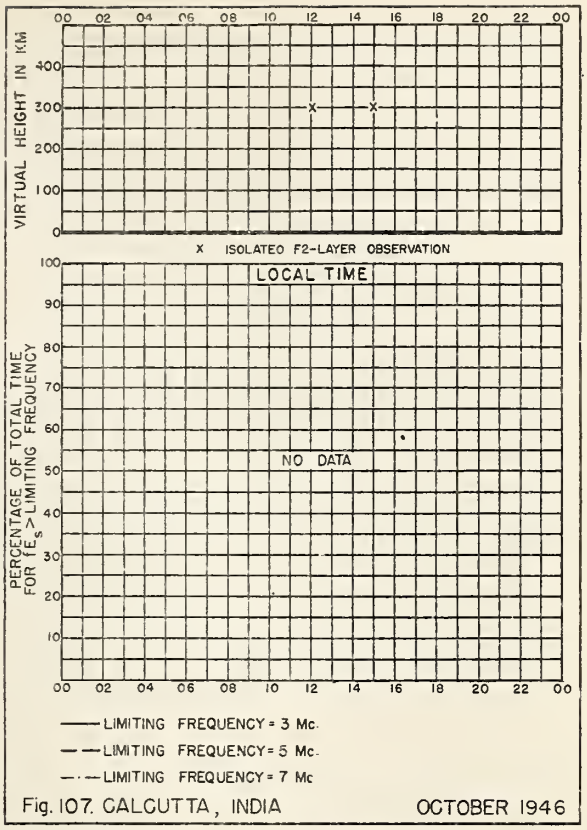

Fig. 107. CALCUTTA, INDIA OCTOBER 1946

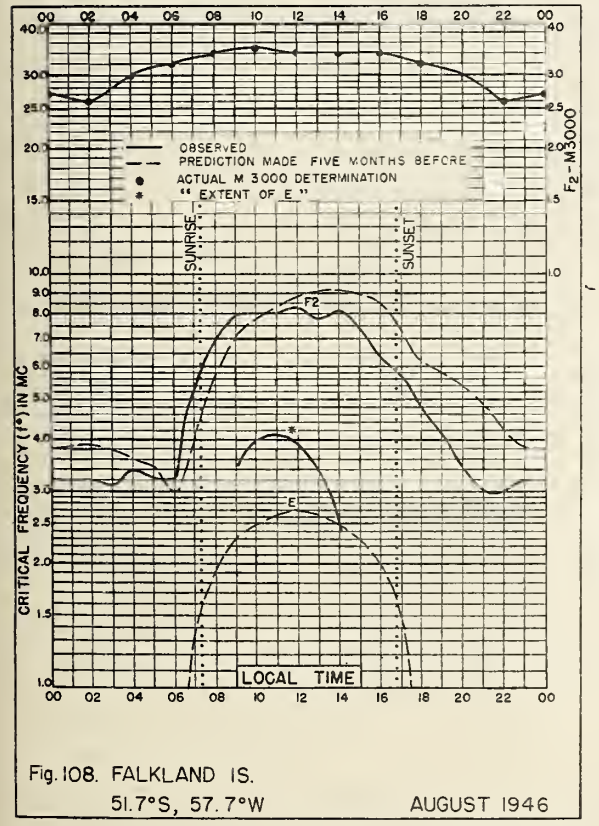

Fig. 108. FALKLAND IS.
51.7°S, 57.7°W AUGUST 1946

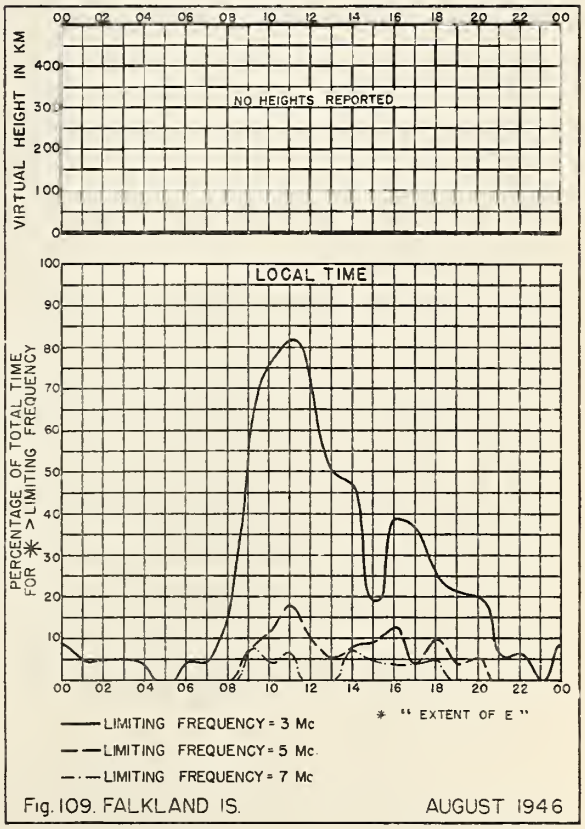

Fig. 109. FALKLAND IS. AUGUST 1946

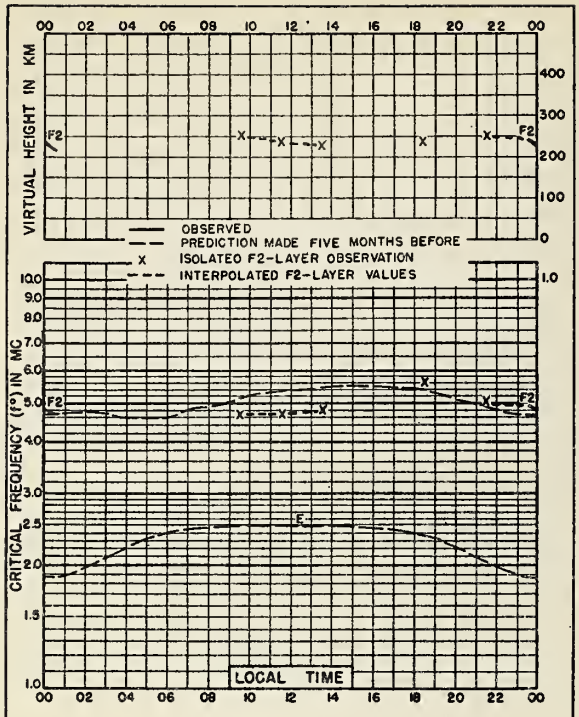

Fig. 110. BUKHTA TIKHAYA, U.S.S.R.
80.3°N, 52.7°E MAY 1946

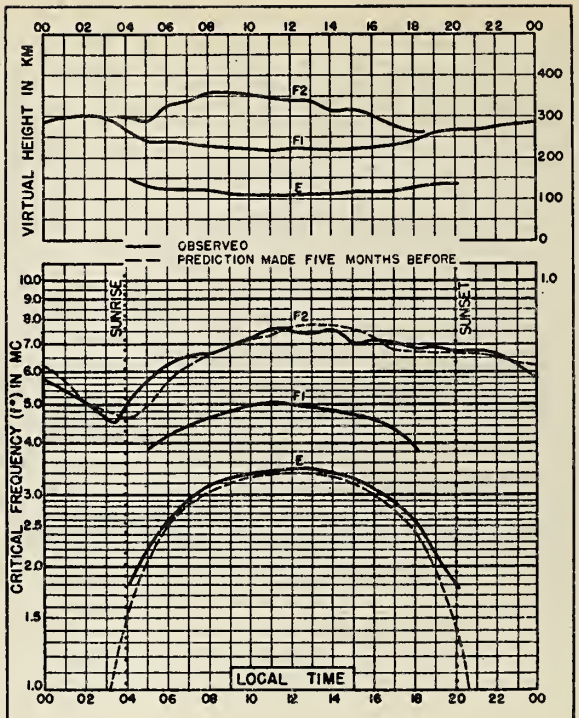

Fig. 111. SVERDLOVSK, U.S.S.R.
56.7°N, 61.1°E MAY 1946

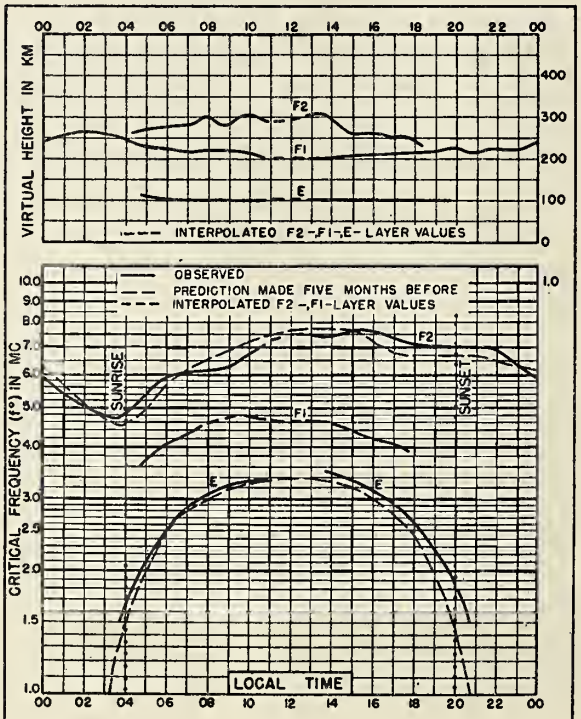

Fig. 112. TOMSK, U.S.S.R.
56.5°N, 84.9°E MAY 1946

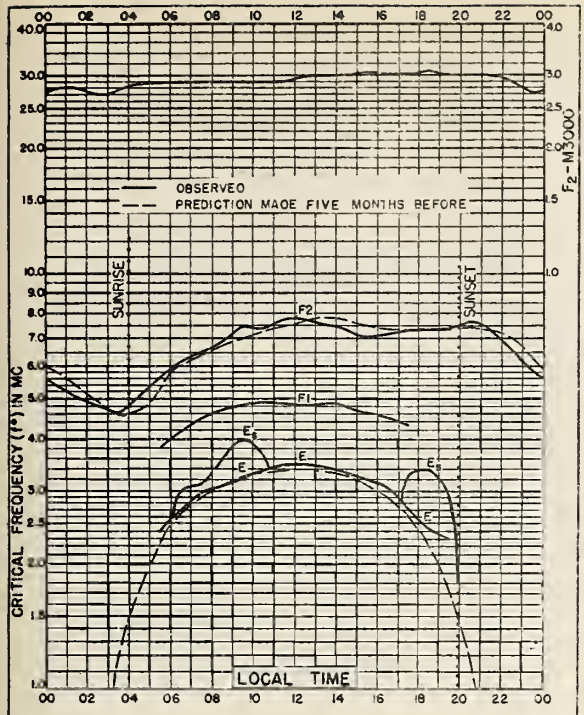

Fig. 113. MOSCOW (KRASNAJA PAKHRA), U.S.S.R.
55.5°N, 37.3°E MAY 1946

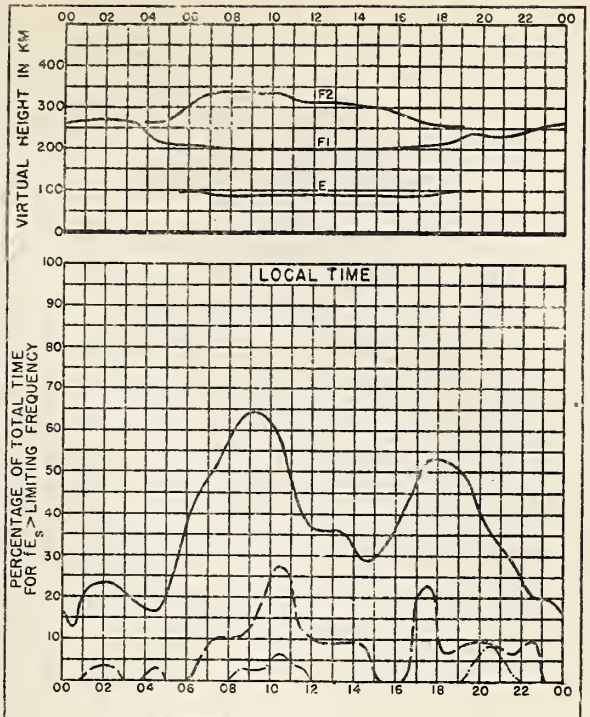

Fig. 114. MOSCOW (KRASNAJA PAKHRA), U.S.S.R. MAY 1946

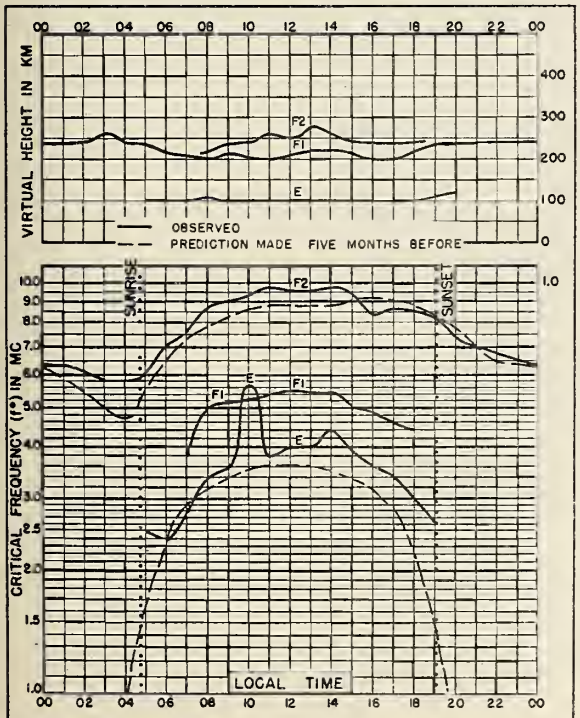

Fig. 115 ALMA ATA, U.S.S.R.
43.2°N, 76.9°E MAY 1946

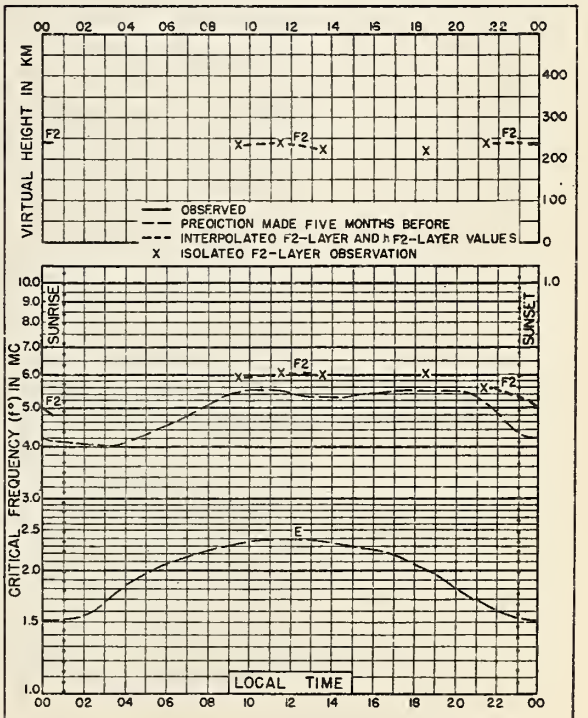

Fig. 116. BUKHTA TIKHAYA, U. S. S. R.
80.3°N, 52.7°E APRIL 1946

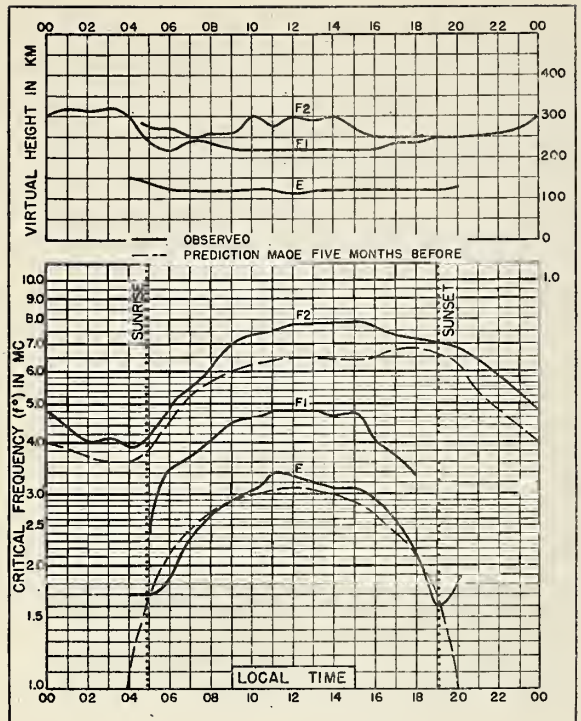

Fig. 117. LENINGRAD, U.S.S.R. (WETKAS)
60.0°N, 30.3°E APRIL 1946

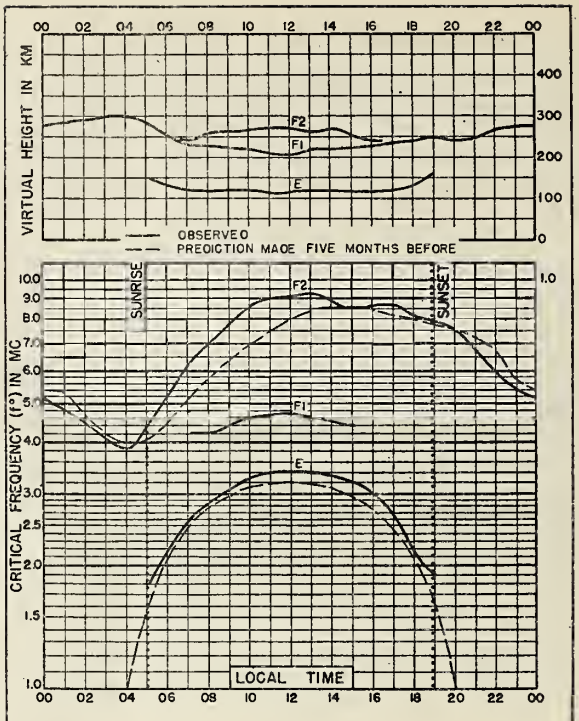

Fig. 118. SVERDLOVSK, U.S.S.R.
56.7°N, 61.1°E APRIL 1946

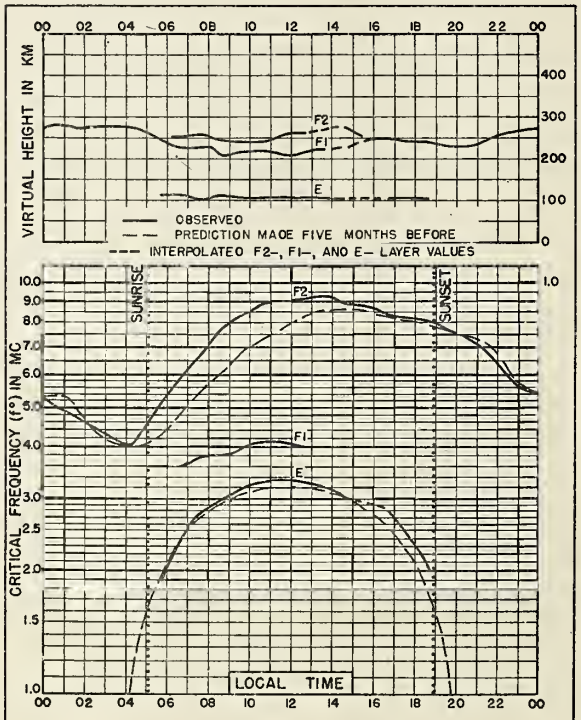

Fig. 119. TOMSK, U.S.S.R.
56.5°N, 84.9°E APRIL 1946

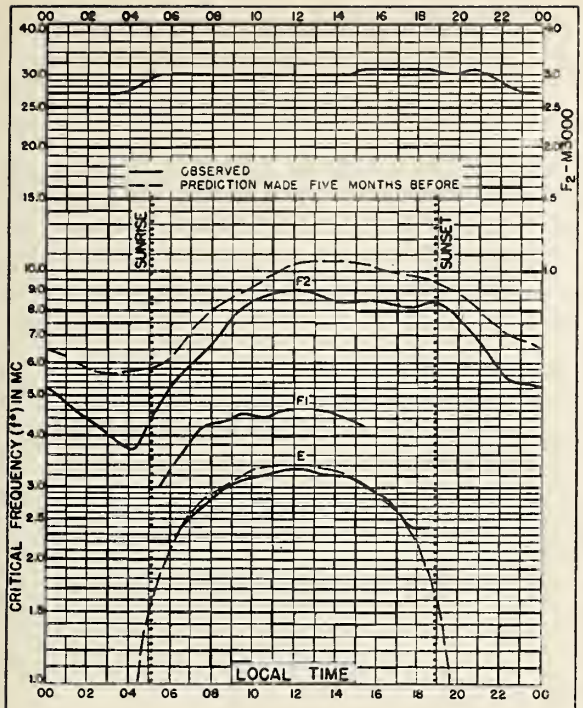

Fig. 120. MOSCOW (KRASNAJA PAKHRA), U.S.S.R.
55.5°N, 37.3°E APRIL 1946

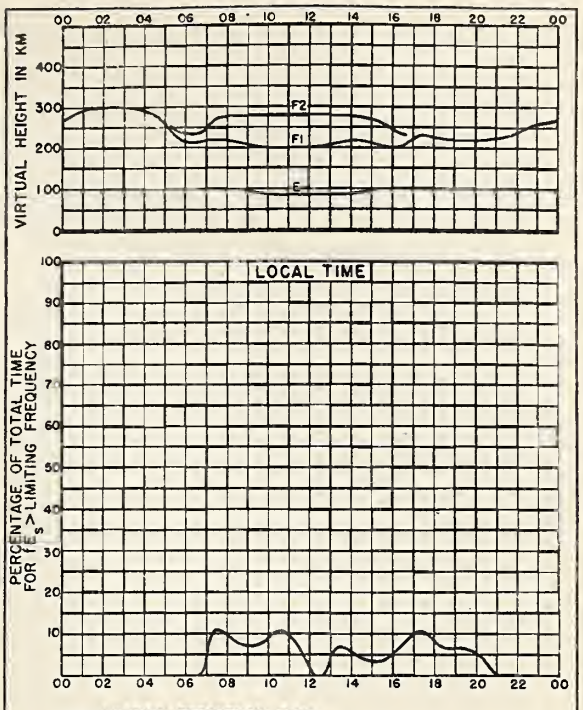

Fig. 121. MOSCOW (KRASNAJA PAKHRA), U.S.S.R. APRIL 1946

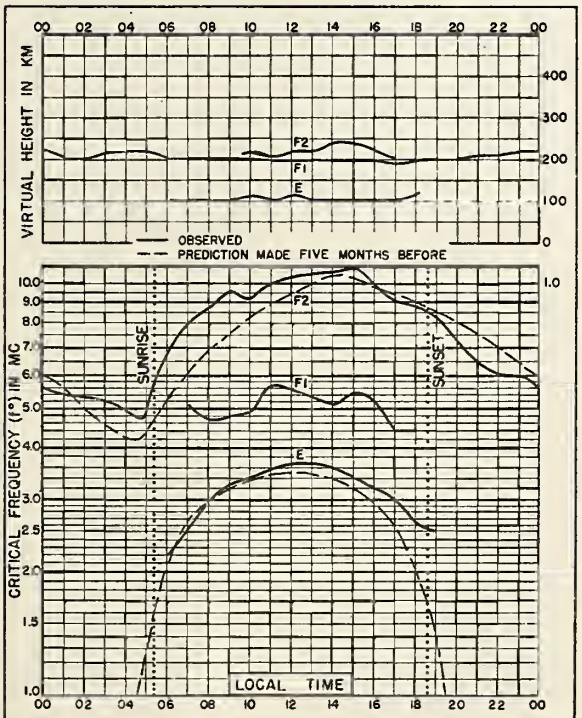

Fig. 122. ALMA ATA, U.S.S.R.
43.2°N, 76.9°E APRIL 1946

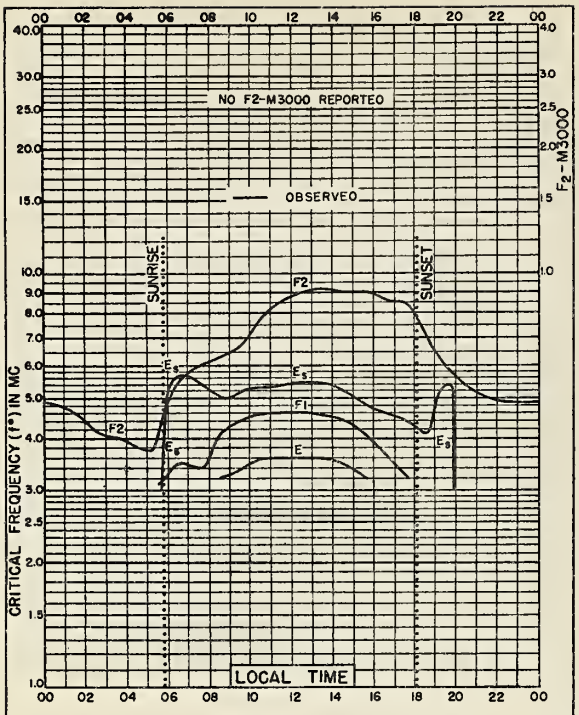

Fig. 123. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W APRIL 1943

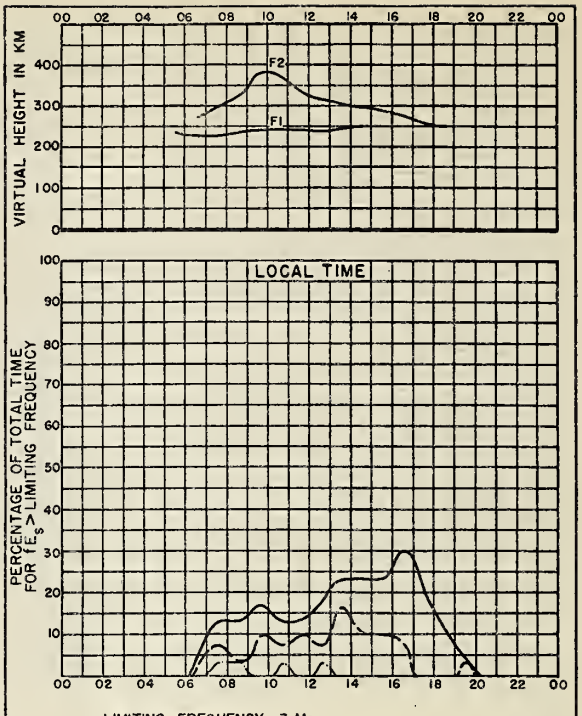

Fig. 124. SAN JUAN, PUERTO RICO APRIL 1943

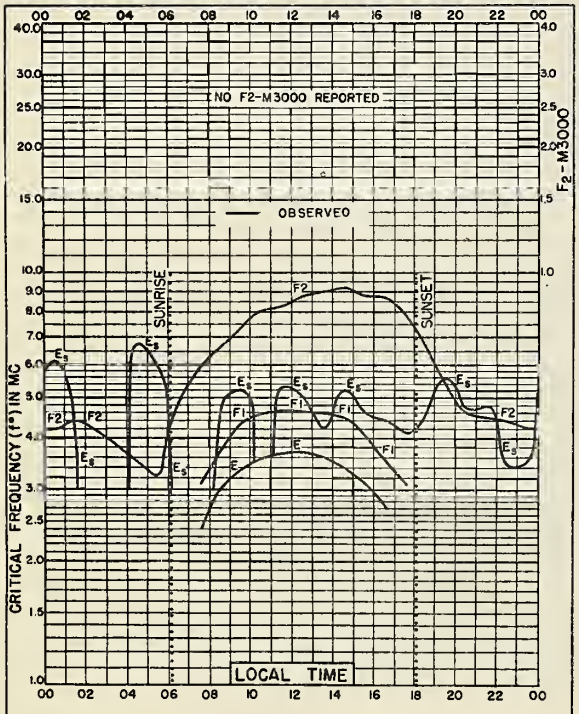

Fig. 125. SAN JUAN, PUERTO, RICO
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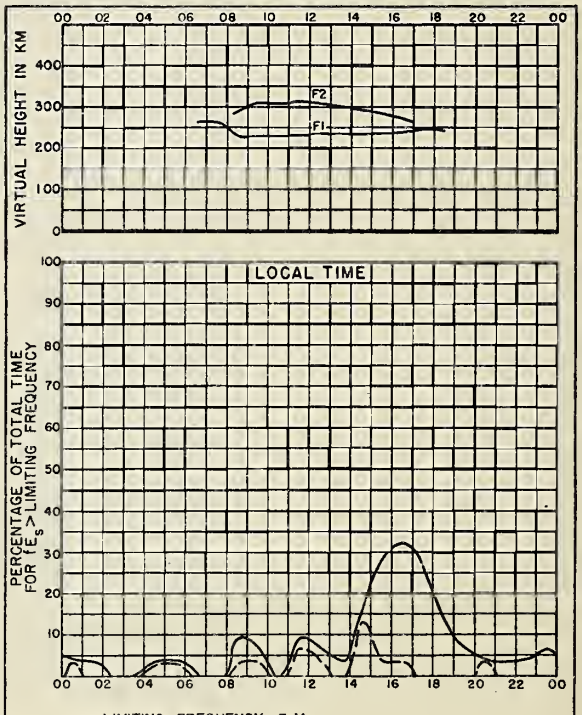

Fig. 126. SAN JUAN, PUERTO RICO MARCH 1943

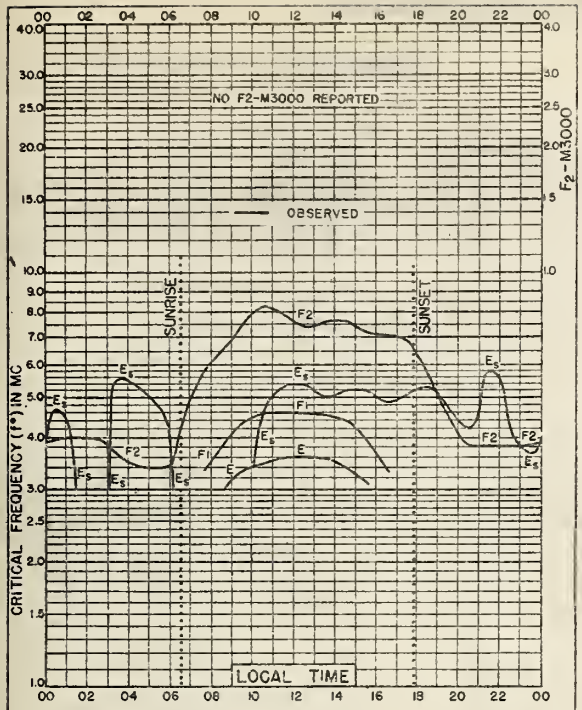

Fig. 127. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W FEBRUARY 1943

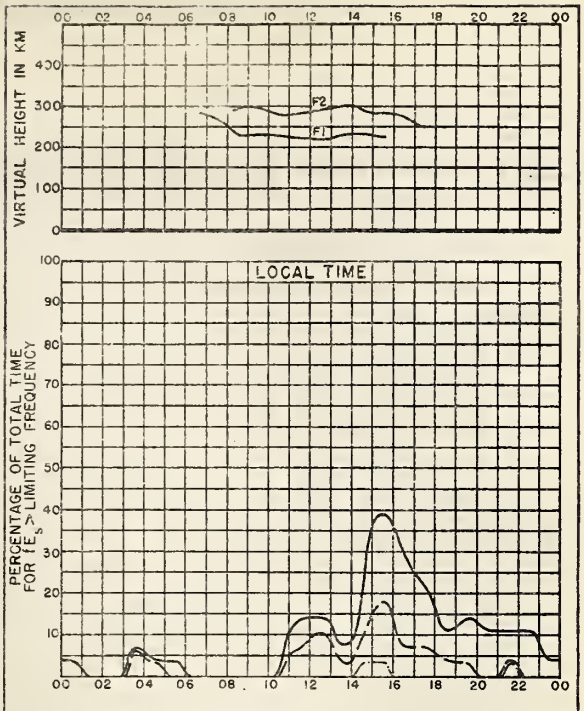

Fig 128. SAN JUAN, PUERTO RICO FEBRUARY 1943

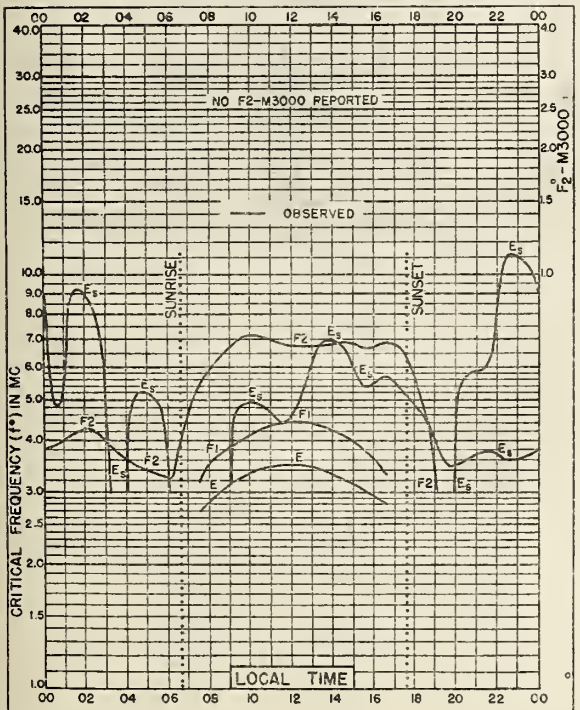

Fig. 129. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W JANUARY 1943

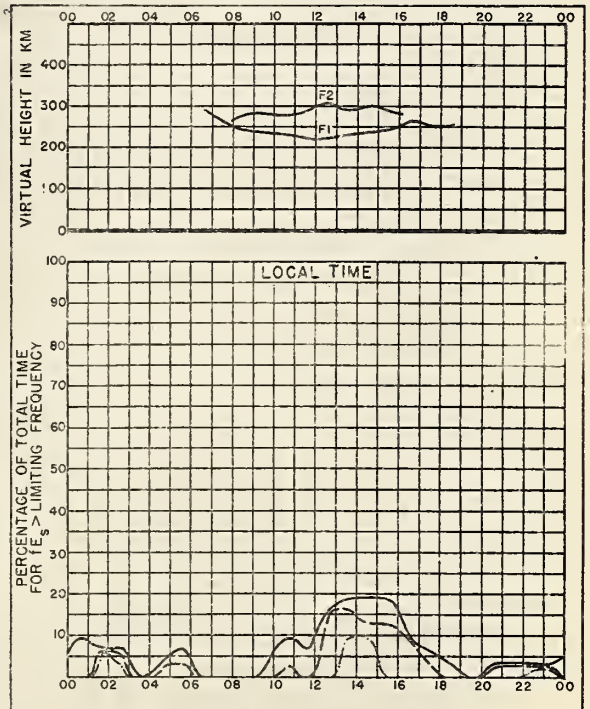

Fig. 130. SAN JUAN, PUERTO RICO JANUARY 1943

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CRPL and IRPL REPORTS

Daily:

Radio disturbance warnings, every half hour from broadcast station WWV of the National Bureau of Standards.
Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Weekly:

CRPL–J. Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

CRPL–Ja. Semimonthly Frequency Revision Factors for CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL–D. Basic Radio Propagation Predictions—Three months in advance. (War Dept. TB 11–499– , monthly supplements to TM 11–499; Navy Dept. DNC–13–1 ( ), monthly supplements to DNC–13–1.)
CRPL–F. Ionospheric Data.

Quarterly:

*IRPL–A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.
*IRPL–H. Frequency Guide for Operating Personnel.
Reports on high-frequency standards.
Reports on microwave standards.

Nonscheduled reports:

CRPL–1–1. Prediction of Annual Sunspot Numbers.

Reports issued in past:

IRPL Radio Propagation Handbook, Part 1. (War Dept. TM 11–499; Navy Dept. DNC–13–1.)
IRPL–C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.
IRPL–G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions.
IRPL–R. Unscheduled reports:
- R4. Methods Used by IRPL for the Prediction of Ionospheric Characteristics and Maximum Usable Frequencies.
- R5. Criteria for Ionospheric Storminess.
- R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.
- R10. A Proposal for the Use of Rockets for the Study of the Ionosphere.
- R11. A Nomographic Method for Both Prediction and Observation Correlation of Ionosphere Characteristics.
- R12. Short Time Variations in Ionospheric Characteristics.
- R14. A Graphical Method for Calculating Ground Reflection Coefficients.
- R15. Predicted Limits for *F*2-layer Radio Transmission Throughout the Solar Cycle.
- R16. Predicted *F*2-layer Frequencies Throughout the Solar Cycle, for Summer, Winter, and Equinox Season.
- R17. Japanese Ionospheric Data—1943.
- R18. Comparison of Geomagnetic Records and North Atlantic Radio Propagation Quality Figures—October 1943 Through May 1945.
- R19. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for June.
- R20. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for September.
- R21. Notes on the Preparation of Skip-Distance and MUF Charts for Use by Direction-Finder Stations. (For distances out to 4000 km.)
- R22. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for December.
- R23. Solar-Cycle Data for Correlation With Radio Propagation Phenomena.
- R24. Relations Between Band Width, Pulse Shape and Usefulness of Pulses in the Loran System.
- R25. The Prediction of Solar Activity as a Basis for Predictions of Radio Propagation Phenomena.
- R26. The Ionosphere as a Measure of Solar Activity.
- R27. Relationships Between Radio Propagation Disturbance and Central Meridian Passage of Sunspots Grouped by Distance From Center of Disc.
- R28. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for January.
- R29 and 29–A. Revised Classification of Radio Subjects Used in National Bureau of Standards and First Supplement (N. B. S. Letter Circular LC–814 and Supplement, superseding Circular C385).
- R30. Disturbance Rating in Values of IRPL Quality—Figure Scale From A. T. & T. Co. Transmission Disturbance Reports to Replace T. D. Figures as Reported.
- R31. North Atlantic Radio Propagation Disturbances, October 1943 Through October 1945.
- R32. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for February.
- R33. Ionospheric Data on File at IRPL.
- R34. The Interpretation of Recorded Values of *fEs*.
- R35. Comparison of Percentage of Total Time of Second-Multiple *Es* Reflections and That of *fEs* in Excess of 3 Mc.

IRPL–T. Reports on Tropospheric Propagation.
- T1. Radar operation and weather. (Superseded by JANP 101.)
- T2. Radar coverage and weather. (Superseded by JANP 102.)

CRPL–T3. Tropospheric Propagation and Radio-Meteorology. (Reissue of Columbia Wave Propagation Group WPG–5.)

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